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Milling & Baking News

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A.B.A. preparing blueprint for baking environmental issues

DANA POINT, CALIF., Dec. 18. — The decade ahead will be "a very difficult" one for wholesale bakers and other food processors who increasingly will be affected by a deluge of state and federal environmental regulations on issues ranging from clean air and water to alternative fuels and solid waste. And while not all of the answers on these environmental issues are available, American Bakers Association has determined that the time has come for baking, individually and collectively, to make the environment a priority interest and identify courses of action for the 1990s.

These were among conclusions reached at a three-day environmental conference sponsored by A.B.A. at Dana Point. Approximately 100 persons, including 24 speakers, gathered Dec. 3-5 at Dana Point Resort to identify the environmental issues affecting wholesale baking and to consider individual and group responses.

With California widely recognized as a bellwether state for environmental issues, considerable discussion at the A.B.A. conference centered on activity affecting baking in that state. Speakers and conference registrants addressed California's clean air initiatives and baking oven emission controls, among others.

Also addressed were issues affecting bak-

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Final stance by European Community on agricultural trade reform under Uruguay Round may bring major change in C.A.P.

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U.S.D.A. marketing specialist says deviations in production or import policies could dramatically alter world trade.

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Connecticut baking company slates $2.4-million expansion project to double production capacity for buns and rolls.

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LATE NEWS HIGHLIGHTS

Record net underscores ConAgra's food chain balance

OMAHA, Dec. 18. — Record second-quarter and first-half net earnings of ConAgra, Inc. underscore the Omaha-based company's food chain balance, according to Charles M. (Mike) Harper, chairman and chief executive officer. Net income of ConAgra in the second quarter ended Nov. 26 aggregated $63,945,000, equal to 52c per share on the common stock, up 13% from the year-ago quarter. Sales were $3,860,536,000, up 36%. In the first half ended Nov. 26, net income of ConAgra was $113,930,000, equal to 92c per share, up 20% from the year-ago half. First-half sales were $7,868,578,000, up 39% from the first six months of fiscal 1989. Current second-quarter and first-half earnings per share results reflect a three-for-two stock split effective Dec. 1.

David Lipka to board of directors of J. Lyons & Co.

LONDON, Dec. 18. — J. Lyons & Co. Ltd., the food division of Allied-Lyons P.L.C., has named David H. Lipka and William I. Savel to its board of directors. Mr. Lipka is president and chief executive officer of DCA Food Industries, Inc., New York; Mr. Savel is president and chief executive officer of Baskin-Robbins Ice Cream Co., Glendale, Calif. Both U.S. companies are owned by Allied-Lyons. The parent company has named Derrick Brown as assistant managing director of J. Lyons & Co. Mr. Brown has been a member of the J. Lyons & Co. board since 1985 and of the Allied-Lyons board since 1988.

British bakery workers accept revised pay offer

LONDON, Dec. 18. — A ballot of workers at Allied Bakeries, part of Associated British Foods P.L.C., and British Bakeries, a division of Ranks Hovis McDougall P.L.C., resulted in acceptance of a pay increase of 8.85% offered by the Federation of Bakers, which represents Britain's two largest bread bakers. These are the only two companies in the United Kingdom covered by a national agreement with the Bakers, Food and Allied Workers Union. The Federation had originally offered a 7.6% pay rise, but

Continued on Page 8

F.D.A. overhaul of 1987 health claims proposal proceeds

WASHINGTON, Dec. 18. — The Food and Drug Administration has submitted a detailed proposal to the Department of Health and Human Services that would place new restrictions on health claims for food — claims that have mushroomed during a lengthy period of delay in completing a rulemaking originated in 1987 by F.D.A.

The 87-page document, obtained by *Milling & Baking News* through American Bakers Association, is awaiting approval by H.H.S. for publication in the *Federal Register*. It was submitted to Dr. Louis W. Sullivan, Secretary of Health and Human Services, by F.D.A. Commissioner Frank E. Young, whose resignation is effective today.

The F.D.A. document, Dr. Young stated in the letter to Dr. Sullivan, contains three major provisions:

1 — A withdrawal of a 1987 proposal on

Continued on Page 9

Outstanding potential for production of soft red in 1990 augurs well for users of soft flour, both as to adequacy of supplies and cost. At same time, 1989-90 provides excellent example of how a huge soft red crop can disappear. No other class of wheat is governed to such an extent by export demand.

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Ingredient week

Breaking from a recent lull, demand for **bakery flour** expanded. Largest business was for coverage in the first four months of 1990. Sri Lanka tendered for flour under E.E.P. (See Page 33.)

Wheat futures ended higher, though a weekend selloff pared advances. The largest gains were scored in new crop futures. Export wheat business was light, but several tenders were working. Farmer selling of wheat was light. (See Page 34.)

Bookings of **bakery shortening** were limited to January-February fill-in requirements. Few significant long-term bookings were transacted. Shipping directions were in a seasonal slump. Palm oil prices remained depressed. (See Page 38.)

Only scattered bookings of **semolina** were completed. Prices moved higher and inquiry was light. Most pasta makers had contract balances through January. (See Page 37.)

Individual losses took place in **milk products**. All **dried egg products** registered small to moderate losses. Gains were recorded in **cocoa powder**. (See Page 37.)

Sweeteners presented a mixed picture. Spot raw cane was easier and deferred irregular. Prices for finished cane sugar were steady to higher. West coast beet sugar was easier; Midwest steady. (See Page 36.)

Sharp advances were recorded in **millfeed**. Active competition developed for 30-day shipment. (See Page 39.)

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LATE NEWS HIGHLIGHTS

Continued from Page 1 this was rejected by union members who then authorized a strike that was considered a threat to bread supplies over the Christmas holiday. The union demanded a 10% increase along with extra vacation pay. The offer finally accepted, by a vote of 4,336 to 2,602, was negotiated under the auspices of the Advisory Conciliation and Arbitration Service. The new offer means an increase of £10 ($16) per week in the basic pay rate, taking the weekly wage at the lowest of four grades to £123.12 ($197). Improvements also were offered on sick pay, safety issues and holidays.

New Burger King sandwich on oat bran bun

MIAMI, Dec. 18. — Burger King Corp., a subsidiary of The Pillsbury Co., which is owned by Grand Metropolitan P.L.C. of the United Kingdom, early next year plans to launch nationwide a new chicken sandwich — BK Broiler — on an oat bran bun. According to a spokesman for Burger King, the new oat bran bun will be 4 inches in diameter, resembling a traditional hamburger bun, and is the first oat-based bun offered by the company. Burger King decided to offer a sandwich featuring an oat bran bun, the spokesman said, because oat-based items currently are popular with consumers. As preparation of the BK Broiler, a formed chicken patty, requires some equipment modifications, the sandwich may not be in all Burger King restaurants until March. The product currently is in test market in San Diego and Greensboro, N.C. The nationwide introduction will be supported with an extensive advertising campaign that will begin at the end of February.

Moscow McDonald's flooded with 25,000 applications

Moscow, Dec. 18. — In contrast with United States fast-food restaurants, many of which are begging for help, the first McDonald's Corp. outlet in Moscow has been overwhelmed with more than 25,000 applications to fill 630 crew positions. The response results from a single advertisement in a Moscow newspaper. The applicants have varied backgrounds, including housewives re-entering the work force and students from Moscow University and other schools. Situated on Pushkin Square just off Gorky Street, the first McDonald's restaurant in Moscow is scheduled to open Jan. 31 and will seat 900 customers. The restaurant is part of a joint venture agreement between McDonald's Restaurants of Canada Ltd. and the Food Service Administration of the Moscow City Council. The agreement calls for an initial 20 McDonald's restaurants and a food production and distribution center in Moscow (see *Milling & Baking News* of Aug. 1, Page 45).

Commodity prices of GSM-credit sales to be reviewed

WASHINGTON, Dec. 18. — All applications for payment guarantees under the GSM-102 and GSM-103 credit guarantee programs will be reviewed to determine whether the price of the commodity being sold falls within the range of prevailing market prices, according to Paul Dickerson, general sales manager of the Foreign Ag- **Continued on Page 45**

COMMENT

New holiday season dimension

The breadstuffs industry of America appears to have been thrust into a unique position in light of the momentous events happening around the world as this holiday season approaches. Operating within the relatively sheltered environment of the United States, where many segments of the business have prospered as a result primarily of growing consumer preference for the industry's principal products, breadstuffs also is well aware of the needs of fellow grain men, millers and bakers in other parts of the world.

Indeed, some of the most illuminating stories to have come from Eastern Europe as the former U.S.S.R. satellites strive to establish their own free economies told of entrepreurial efforts by people like bakers seeking to supply the wants of their transformed countries. Many of the globally minded of breadstuffs in America are struggling at this season with questions having to do with possible participation in the economic "revolution" that is occurring in Eastern Europe.

One senses an attitude that simply observing the fast-moving events in this important part of the world is not enough, that ways must be devised to become a "player" in the best sense of that word. This excitement, and, yes, these opportunities add a significant dimension to this message of Season's Greetings to all our readers and friends.

MILLING CENSUS REPORT

Milling & Baking News

BUHLER

Growth in flour shipments continues

CONTINUATION OF AN UPWARD trend in shipments of wheat flour, including a 23% increase in the principal product category — bakers' and institutional white bread-type flour — is noted in the preliminary report of the 1987 Census of Manufactures for the Flour and Other Grain Mill Products Industry, Standard Industrial Classification 2041.

MILLING CENSUS REPORT

The Flour and Other Grain Mill Products Industry comprises establishments primarily engaged in milling flour or meal from wheat, corn and other grain, except rice. Principal products include wheat flour, flour mixes and refrigerated and frozen doughs and batters made in flour mills, corn flour and other corn mill products.

Under a revision in Standard Industrial Classification codes adopted in 1986, data on flour mixes and refrigerated and frozen doughs and batters that are produced in establishments other than flour mills are listed separately in S.I.C. 2045, newly defined as Prepared Flour Mixes and Doughs. (Story on Page 9-A.)

Net increases 37,642,000 cwts

The preliminary 1987 Census report places total wheat flour shipments by all establishments, regardless of industry classification, at 325,244,000 cwts, up 13%, or 37,642,000 cwts, from 287,602,000 cwts in 1982. The total in 1977 was 282,133,000 cwts. Value of shipments of wheat flour in 1987 was $3,208.4 million, up 3% from $3,102.3 million in 1982. The difference in the volume and value of shipment increases primarily reflects lower ingredient costs (see story on Page 11-A).

Value added by manufacture by plants in S.I.C. 2041 totaled $1,325.7 million in 1987, up 21% from $1,094.3 million five years earlier. The U.S. Department of Commerce describes value added by manufacture as "the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas."

While the preliminary Census report does not provide a total volume shipment figure for products of the Flour and Other Grain Mill Products Industry, aggregating the shipment data for individual product categories suggests that total shipments in 1987 were up 7% from 1982. On this inexact basis, shipments of products from milling wheat, corn and other grain, except rice — by establishments classified in the Flour and Other Grain Mill Products Industry as well as those classified in other industries — in 1987 aggregated 361,869,200 cwts, compared with 337,902,900 cwts in 1982.

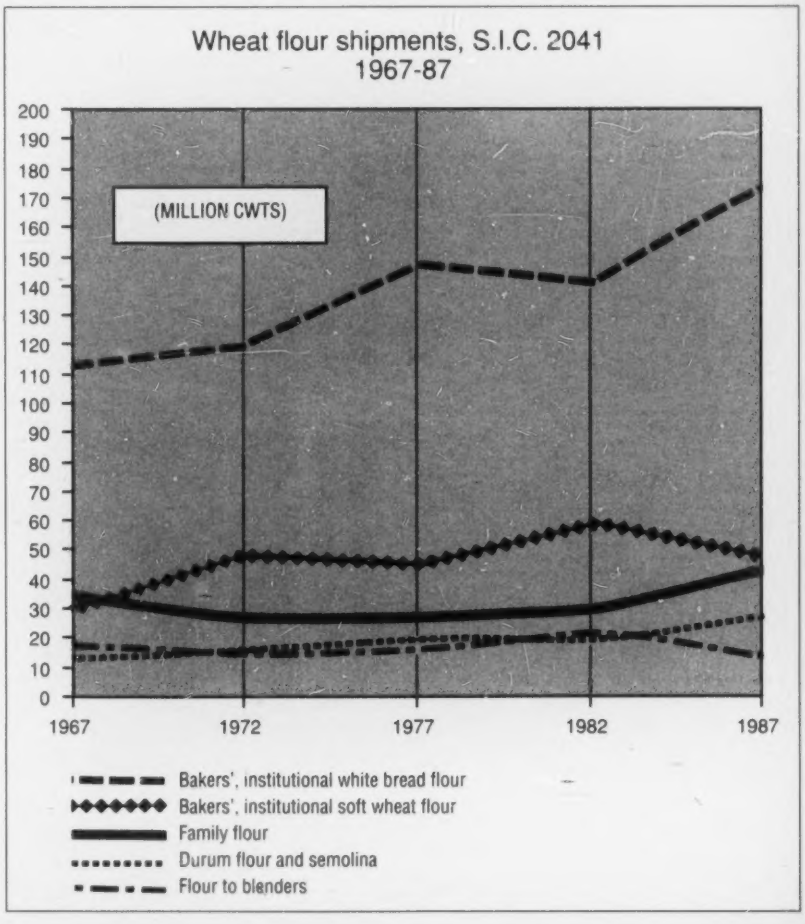
Total value of these shipments in 1987 was $4,777.5 million, down 2% from $4,871.2 million five years earlier.

According to the preliminary Census report, shipments of all wheat flour, except mixes, includes white, whole wheat, durum, bulgur and other wheat flour. Shipments of white flour, including export and domestic use, totaled 293,882,800 cwts in 1987, up 13% from 260,799,200 cwts in 1982 and compared with 250,810,000 in 1977. Value of these shipments in 1987 was $2,842.9 million, up 2% from $2,797.9 million five years earlier.

White flour shipments up

White flour shipments in 1987 included 275,823,100 cwts for domestic use, up 12% from 247,280,700 cwts in 1982, and at least 18,059,700 cwts of flour shipped for export, up 34% from 13,518,500 cwts in 1982. Some export data were withheld in the 1987 preliminary report because the estimate did not meet publication standards on the basis of either the response rate or a consistency review.

According to the preliminary report, domestic white flour shipments included 172,381,100 cwts of bakers' and institutional white-bread type flour; 47,333,000 cwts of bakers' and institutional soft wheat flour; 42,345,800 cwts of white family flour; and



Flour, Other Grain Mill Products shipments

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included.

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
2041- --	**FLOUR AND OTHER GRAIN MILL PRODUCTS**						
	Total	**(NA)**	**(X)**	**4 777.5**	**(NA)**	**(X)**	**4 871.2**
20411 --	Wheat flour, except flour mixes	(NA)	(X)	3 208.4	(NA)	(X)	3 102.3
	White flour:						
	Shipped for export:						
20411 05	Commercial dollar exports, all white flour types, 1,000 sacks (cwt)	13	18 059.7	140.6	13	4 327.3	43.6
20411 07	All other exports of white flour, such as those under Public Law 480, do	5	(S)	97.5	9	9 191.2	94.5
	Domestic shipments:						
	Bakers' and institutional white bread-type flour:						
20411 11	Shipped in bulk cars or trucks, 1,000 sacks (cwt)	20	**149 010.9	1 326.2	22	120 204.9	1 231.3
20411 13	Shipped in containers, including tote bins, do	15	23 370.2	245.7	18	19 729.9	239.6
	Bakers' and institutional soft wheat flour, including commercial bakery, restaurant, hospital, etc.:						
20411 15	Shipped in bulk cars or trucks, 1,000 sacks (cwt)	24	38 640.3	320.9	30	52 742.6	498.2
20411 17	Shipped in containers, including tote bins, do	19	8 692.7	89.8	19	5 171.0	56.6
	Family white flour:						
	All family flour other than self-rising, such as phosphated, plain, bromated, enriched, and all-purpose, including all-purpose purchased by the U.S. Government for domestic donation:						
20411 21	Shipped in containers less than 25 lb, 1,000 sacks (cwt)	26	*28 774.0	358.5	24	20 380.8	311.7
20411 23	Shipped in containers 25 lb or more, do	21	*9 907.7	99.3	17	3 019.2	48.8
20411 26	Self-rising flour, do	18	3 664.1	66.2	(NA)	4 864.0	84.7
	Flour shipped to blenders or other processors (for further processing and/or packing before resale or shipment):						
20411 29	For use in food products (mixes, refrigerated doughs, soups, etc.), 1,000 sacks (cwt)	11	**10 700.9	81.6	18	17 618.6	163.2
20411 28	For use in nonfood products (pet food, industrial, etc.), do	13	*3 062.3	16.6	10	3 549.5	25.7
	Other than white flour:						
20411 31	Whole wheat, 1,000 sacks (cwt)	17	4 633.4	50.4	17	2 465.9	27.8
20411 51	Durum flour and semolina, do	10	26 727.8	258.3	9	17 676.5	192.9
20411 61	Bulgur, do	5	(S)	30.1	5	5 171.2	49.4
20411 98	Other wheat flour, including farina, do	11	(S)	21.4	11	1 489.2	18.0
20411 00	Wheat flour, except flour mixes (including white flour, whole wheat, durum, etc., made from wheat ground in this plant), n.s.k.	(NA)	(X)	5.2	(NA)	(X)	16.3
20412 --	Wheat mill products other than flour	(NA)	(X)	336.9	(NA)	(X)	478.5
20412 13	Wheat mill feed, 1,000 s tons	47	*5 556.6	298.3	64	5 061.9	456.9
20412 19	Other wheat mill products, including wheat germ, wheat bran, etc., do	27	309.4	38.4	9	28.6	8.4
20412 00	Wheat mill products other than flour, n.s.k.	(NA)	(X)	.2	(NA)	(X)	13.2
20413 --	Corn mill products	(NA)	(X)	554.1	(NA)	(X)	553.8
	Corn products for human consumption:						
20413 11	Whole cornmeal, 1,000 sacks (cwt)	10	(S)	36.8	22	3 191.2	51.2
20413 15	Degermed cornmeal, do	9	*5 482.6	165.3	12	7 648.3	111.8
20413 21	Corn grits and hominy, except for brewers' use, do	4	**8 310.1	54.5	10	6 746.3	87.8
20413 23	Corn grits and flakes for brewers' use, do	5	*3 147.9	18.5	8	6 537.4	55.0
20413 65	Hominy feed, cornmeal, and other byproducts of dry corn milling (for animal feed), 1,000 s tons	31	*823.7	68.9	40	1 396.7	138.2
20413 93	Corn flour, 1,000 sacks (cwt)	8	(S)	111.8	8	4 785.7	51.9
	Other corn mill products:						
20413 95	For human consumption, 1,000 sacks (cwt)	9	8 272.0	89.9	11	2 858.6	44.5
20413 97	Not for human consumption, do	6	1 095.5	7.7	5	412.2	3.5
20413 00	Corn mill products, n.s.k.	(NA)	(X)	.7	(NA)	(X)	10.0
20416 --	Other grain mill products	(NA)	(X)	82.2	(NA)	(X)	165.6
20416 11	Rye flour, 1,000 sacks (cwt)	3	1 103.5	9.2	6	1 434.8	16.6
20416 23	Other flour (excluding wheat, corn, rye), do	4	(D)	(D)	9	3 063.6	44.9
20416 27	Other mill feed (oats, rye, buckwheat, etc.), 1,000 s tons	9	(D)	(D)	13	613.5	101.7
20416 00	Other grain mill products, n.s.k.	(NA)	(X)	1.4	(NA)	(X)	2.5
20410 --	Flour and other grain mill products, n.s.k.	(NA)	(X)	159.2	(NA)	(X)	188.9
20410 00	Flour and other grain mill products, n.s.k., typically for establishments with 5 employees or more (see note)	(NA)	(X)	21.4	(NA)	(X)	141.4
20410 02	Flour and other grain mill products, n.s.k., typically for establishments with less than 5 employees (see note)	(NA)	(X)	136.9	(NA)	(X)	47.5

Note: In 1987 Census of Manufactures, data for establishments of small single unit companies with up to 20 employees were estimated from administrative-records data rather than data actually collected from respondents. Employment cutoffs used for administrative-records for each industry and shipments figures are included in code ending with "002". In both 1987 and 1982 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

[1]Data reported by all producers, not just those with shipments of $100,000 or more.

[2]For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

13,763,200 cwts of flour shipped to blenders or other processors.

The 172,381,100 cwts in shipments of bakers' and institutional white bread-type flour — the largest wheat flour product category — was up 23% from 139,934,800 cwts in 1982. The 23% increase is in marked contrast with the previous five-year period, when 1982 shipments were down 4% from 145,781,700 cwts in 1977.

Of the total shipments of bakers' and institutional white bread-type flour in 1987, bulk shipments aggregated 149,010,900 cwts, up 24% from 120,204,900 cwts in 1982, while shipments in containers, including tote bins, aggregated 23,370,200 cwts, up 18% from 19,729,900.

In contrast with the 23% increase in shipments of bakers' and institutional white bread-type flour, shipments of bakers' and institutional soft wheat flour in 1987, totaling 47,333,000 cwts, were down 18% from 57,913,800 cwts in 1982.

Accounting for the decrease in all shipments of bakers' and institutional soft wheat flour in 1987 was a 27% decline in bulk shipments, which totaled 38,640,300 cwts, compared with 52,742,800 cwts in 1982. That decline was partially offset by a 68% increase in shipments of bakers' and institutional soft wheat flour in containers — 8,692,700 cwts in 1987 against 5,171,000 cwts in 1982.

Smaller share for soft flour

In 1987, white flour represented 78% of total shipments of bakers' and institutional flour (219,714,100 cwts) while soft wheat flour accounted for 22% of the total. Those percentages contrast with 1982 shares of 71% and 29%, respectively, but are more in line with the 77% and 23% shares, respectively, prevailing in the 1977 Census.

Shipments of family flour in 1987, according to the preliminary Census report, totaled 42,345,800 cwts, up 50% from 28,264,000 cwts in 1982 and compared with 26,133,000 in 1977. The totals include all-purpose flour purchased by the federal government for domestic donation.

The preliminary report placed 1987 shipments of family flour in containers of less than 25 lbs at 28,774,000 cwts, up 41% from 20,360,800 cwts in 1982. Shipments of family flour in containers of 25 lbs or more totaled 9,907,700 cwts in 1987, up 228% from 3,019,200 cwts five years earlier.

Self-rising flour down 25%

Shipments of self-rising flour in 1987 aggregated 3,664,100 cwts, down 25% from 4,884,000 cwts in 1982 and below 6,386,400 cwts in 1977.

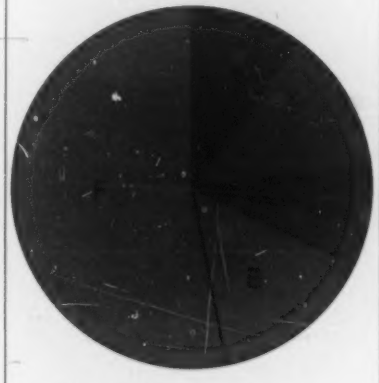
The preliminary Census report placed 1987 shipments of white flour to blenders or other processors at 10,700,900 cwts, down 39% from 17,618,600 cwts in 1982. These usages include mixes, refrigerated doughs and soups. Shipments of white flour for use in nonfood products in 1987 amounted to 3,062,300 cwts, down 14% from 3,549,500 cwts in 1982.

Total white flour shipments for export in 1987 included 18,059,700 cwts for commercial dollar exports, up significantly from 4,327,300 cwts in 1982. Also in the export category are all other shipments of white flour, primarily under the P.L.480 program. Data for these shipments in 1987 were withheld because the estimate did not meet publication standards. In 1982, all other shipments of white flour totaled 9,191,200 cwts.

Value of shipments of domestic white flour, according to the preliminary report, was $2,604.8 million, down 2% from $2,659.8 million in 1982. The total for 1987 included $1,571.9 million for bakers' and institutional white-bread type flour, up 7% from $1,470.9 million in 1982; $410.7 million for institutional soft wheat flour, down 26% from $554.8 million; $524 million for white family flour, up 18% from $445.2 million; and $98.2 million for flour shipped to blenders or other processors, down 48% from $188.9 million.

Value of shipments of white flour for export was $238.1 million, up 72% from $138.1 million in 1982. That value of shipments total for 1987 included $140.6 million as commercial dollar sales, up 222% from $43.6 million in 1982, and $97.5 million for all other exports of white flour, up 3% from $94.5 million.

Wheat flour shipments by type, 1987



A. 10% Other than white flour
B. 13% Family flour
C. 5% Export
D. 4% Shipped to blenders
E. 15% Bakers' and institutional soft wheat flour
F. 53% Bakers' and institutional white bread-type flour

Other wheat flour in growth

According to the preliminary Census report, 1987 shipments of other flour products, including whole-wheat flour, durum flour and semolina, bulgur flour and other wheat flour, such as farina, were up from 1982 levels.

Shipments of wheat flour, other than white, in 1987, totaled at least 31,361,200 cwts, up 17% from 26,802,800 cwts in 1982. The 1987 total is inexact because data for two categories — bulgur and other wheat flour — were withheld as the estimates did not meet publication standards. Value of shipments for the overall category in 1987 was $365.4 million, up 20% from $304.4 million.

The preliminary report placed shipments of whole-wheat flour in 1987 at 4,633,400 cwts, up 88% from 2,465,900 cwts in 1982. Shipments of durum flour and semolina in 1987 totaled 26,727,800 cwts, up 51% from 17,676,500 cwts in 1982.

Value of shipments of whole-wheat flour in 1987 was $50.4 million, up from $27.8 million in 1982; value of durum flour and semolina was $258.3 million, up from $192.9 million.

The preliminary report places shipments of wheat millfeed in 1987 at 5,556,600 tons, up 10% from 5,061,900 tons in 1982. Value of millfeed shipments in 1987 was $298.3 million, down 35% from $456.9 million in 1982.

Shipments of wheat germ showed a significant increase in 1987 at 309,400 tons, up ninefold from 28,600 tons in 1982 and compared with 73,800 tons

Continued on Page 9-A

Mix, Dough and Batter shipments

(Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included.

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
2041- —	**FLOUR AND OTHER GRAIN MILL PRODUCTS**						
20415 —	Flour mixes and refrigerated and frozen doughs and batters, made in flour mills (see also code 20450)	(NA)	(X)	436.7	(NA)	(X)	382.4
	Flour mixes:						
	Pancake and waffle mixes:						
20415 51	Shipped in containers less than 5 lb	1,000 sacks (cwt)					
		11	**1 653.8	56.3	8	726.1	37.9
20415 52	Shipped in containers 5 lb or more	do	3	(D)	(D)	4	155.3	5.8
	Cake mixes, including gingerbread:						
20415 53	Shipped in containers less than 5 lb	1,000 sacks (cwt)					
		4	(D)	(D)	5	1 381.9	97.8
20415 54	Shipped in containers 5 lb or more	do	4	(D)	(D)	3	329.4	12.4
	Biscuit mixes:						
20415 56	Shipped in containers less than 5 lb	1,000 sacks (cwt)					
		10	*527.7	18.0	7	525.7	20.0
20415 57	Shipped in containers 5 lb or more	do	4	(D)	(D)	6	212.5	8.5
20415 60	Pie crust mixes	do	1	(D)	(D)	2	(D)	(D)
20415 63	Doughnuts and other sweet yeast goods mixes	do	3	(D)	(D)	3	(D)	(D)
	Bread and bread-type roll mixes:						
20415 66	Shipped in containers less than 5 lb	1,000 sacks (cwt)					
		3	117.7	7.6	2	(D)	(D)
20415 67	Shipped in containers 5 lb or more	do	5	534.1	18.3	5	693.3	17.0
	Other prepared flour mixes, including cookie mixes:						
20415 72	Shipped in containers less than 5 lb	1,000 sacks (cwt)					
		5	(D)	(D)	8	*1 660.8	75.6
20415 74	Shipped in containers 5 lb or more	do	5	(S)	11.3	10	865.7	20.2
	Refrigerated doughs and batters:						
20415 81	Biscuit dough	mil lb	-	-	-	-	-	-
20415 85	Bread and bread-type roll dough, including dinner	do	-	-	-	-	-	-
20415 87	Other doughs and batters, including pizza, coffeecake, pancake, cookie, etc.	do	2	(D)	(D)	2	(D)	(D)
	Frozen doughs and batters:							
20415 91	Bread and bread-type roll dough	mil lb	9	(D)	(D)	(NA)	(3)	(3)
20415 93	Other frozen doughs and batters, including pizza, coffeecake, pancake, cookie, etc.	do	5	(D)	(D)	(NA)	(3)	(3)
20415 00	Flour mixes and refrigerated doughs, n.s.k.		(NA)	(X)	-	(NA)	(X)	(D)
20416 —	Other grain mill products		(NA)	(X)	82.2	(NA)	(X)	165.6
20416 11	Rye flour	1,000 sacks (cwt)	3	1 103.5	9.2	6	1 434.8	16.6
20416 23	Other flour (excluding wheat, corn, rye)	do	4	(D)	(D)	9	3 063.6	44.9
20416 27	Other mill feed (oats, rye, buckwheat, etc.)	1,000 s tons	9	(D)	(D)	13	613.5	101.7
20416 00	Other grain mill products, n.s.k.		(NA)	(X)	1.4	(NA)	(X)	2.5
20410 —	Flour and other grain mill products, n.s.k.		(NA)	(X)	159.2	(NA)	(X)	188.9
20410 00	Flour and other grain mill products, n.s.k., typically for establishments with 5 employees or more (see note)		(NA)	(X)	21.4	(NA)	(X)	141.4
20410 02	Flour and other grain mill products, n.s.k., typically for establishments with less than 5 employees (see note)		(NA)	(X)	136.9	(NA)	(X)	47.5
2045- —	**PREPARED FLOUR MIXES AND DOUGHS**							
	Total		**(NA)**	**(X)**	**2 712.2**	**(NA)**	**(X)**	**1 691.8**
20450 —	Flour mixes and refrigerated and frozen doughs and batters, not made in flour mills (see also code 20415):							
	Flour mixes:							
	Pancake and waffle mixes:							
20450 51	Shipped in containers less than 5 lb	1,000 sacks (cwt)						
		6	730.4	43.5	10	2 654.3	114.4
20450 52	Shipped in containers 5 lb or more	do	8	1 914.5	65.4	10	812.6	17.3
	Cake mixes, including gingerbread:							
20450 53	Shipped in containers less than 5 lb	1,000 sacks (cwt)						
		8	(D)	(D)	12	6 181.1	451.5
20450 54	Shipped in containers 5 lb or more	do	19	4 693.9	355.9	16	**818.4	42.4
	Biscuit mixes:							
20450 56	Shipped in containers less than 5 lb	1,000 sacks (cwt)						
		3	(D)	(D)	4	519.5	7.5
20450 57	Shipped in containers 5 lb or more	do	7	171.7	6.1	11	*521.4	19.0
20450 60	Pie crust mixes	do	7	226.4	14.7	9	(D)	(D)
20450 63	Doughnuts and other sweet yeast goods mixes	do	14	6 215.3	168.1	17	(D)	(D)
	Bread and bread-type roll mixes:							
20450 66	Shipped in containers less than 5 lb	1,000 sacks (cwt)						
		3	(D)	(D)	5	(D)	(D)
20450 67	Shipped in containers 5 lb or more	do	15	1 995.3	91.1	15	1 749.6	41.4
	Other prepared flour mixes, including cookie mixes:							
20450 72	Shipped in containers less than 5 lb	1,000 sacks (cwt)						
		8	3 149.1	235.3	12	**8 664.3	242.4
20450 74	Shipped in containers 5 lb or more	do	12	3 832.7	153.7	13	3 438.4	88.9
	Refrigerated doughs and batters:							
20450 81	Biscuit dough	mil lb	4	(D)	(D)	4	(D)	(D)
20450 85	Bread and bread-type roll dough, including dinner	do	2	(D)	(D)	5	(D)	(D)
20450 87	Other doughs and batters, including pizza, coffeecake, pancake, cookie, etc.	do	10	281.1	222.5	15	(D)	(D)
	Frozen doughs and batters:							
20450 91	Bread and bread-type roll dough	mil lb	26	*470.2	232.3	(NA)	(3)	(3)
20450 93	Other frozen doughs and batters, including pizza, coffeecake, pancake, cookie, etc.	do	27	500.8	238.6	(NA)	(3)	(3)
20450 00	Flour mixes and refrigerated doughs, not made in flour mills, n.s.k., typically for establishments with 5 employees or more (see note)		(NA)	(X)	146.3	(NA)	(X)	(D)
20450 02	Flour mixes and refrigerated doughs, not made in flour mills, n.s.k., typically for establishments with less than 5 employees (see note)		(NA)	(X)	68.2	(NA)	(X)	15.5

[1]Data reported by all producers, not just those with shipments of $100,000 or more.

[2]For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

[3]In 1982, frozen doughs and batters were included in industry 2036, but were not collected as separate product categories.

Continued from Page 5-A

in 1977. Value of shipments of wheat germ in 1987 likewise showed a sharp advance at $38.4 million, up 357% from $8.4 million in 1982.

Shipments of corn mill products for human consumption in 1987, according to the preliminary Census report, totaled 16,940,600 cwts, down 30% from 24,123,200 cwts in 1982. These product shipments include whole corn meal, degermed corn meal, corn grits, flakes and hominy. Value of these shipments in 1987 was $275.1 million, down 10% from $305.8 million.

Shipments of rye flour, as an "other grain mill product," totaled 1,103,500 cwts in 1987, down 23% from 1,434,800 cwts in 1982; value of shipments was $9.2 million, down 45% from $16.6 million.

Census adds frozen doughs, batters

CHANGES IN INDUSTRY definitions and addition of new product categories in the 1987 Census of Manufactures have resulted in an incomplete data package for flour mixes and refrigerated dough and batter products and limits comparisons with previous Census reports. At the same time, the 1987 Census is the first to provide information on the important frozen dough and frozen batter product group.

MILLING CENSUS REPORT

Under a U.S. Department of Commerce revision of Standard Industrial Classification codes adopted in 1986, S.I.C. 2045, previously the Blended and Prepared Flour Industry, is now designated as Prepared Flour Mixes and Doughs. This industry comprises establishments, other than flour mills, producing flour mixes and refrigerated and frozen doughs and batters. Data related to these mixes and doughs produced in flour mill establishments are included under S.I.C. 2041, Flour and Other Grain Mill Products.

In previous Census reports, frozen doughs and batters were included as part of the Frozen Specialties Industry, S.I.C. 2038, but were not reported as a separate product category. In a related change in the 1987 Census, frozen baked foods such as pies, sweet yeast goods, soft cakes and donuts, were shifted from S.I.C. 2038 to a new industry classification, S.I.C. 2053, Frozen Bakery Products.

Shipment value up 60%

According to the preliminary Census report for S.I.C. 2045, value of shipments of flour mixes and refrigerated and frozen doughs and batters by all plants other than flour mills — including those classified in S.I.C. 2045 and those classified in other industries — totaled $2,712.2 million, up 60% from $1,691.8 million in 1982.

Based on the limited data presented for individual products in S.I.C. 2045, "other prepared flour mixes, including cookie mixes," paced poundage shipments in 1987. This category was followed by donuts and other sweet yeast goods mixes; cake mixes; pancake and waffle mixes, and bread and bread-type roll mixes.

Shipments of "other prepared flour mixes" in 1987, according to the preliminary Census report, aggregated 6,981,800 cwts, down 2% from 7,102,700 cwts in 1982. Of the 1987 total, products shipped in containers of 5 lbs or more accounted for 3,832,700 cwts, compared with 3,438,400 cwts in 1982. Products shipped in containers of less than 5 lbs accounted for 3,149,100 cwts, against 3,664,300 cwts in 1982.

Shipments of donut and other sweet yeast goods mixes totaled 6,215,300 cwts in 1987. Information on this product category in the 1982 Census was withheld to avoid disclosing data on individual companies.

According to the preliminary Census report, 1987 shipments of cake mixes totaled at least 4,693,900 cwts; data were withheld on shipments in containers of less than 5 lbs to avoid disclosing information on individual companies. In the 1982 Census, which listed complete data on cake mixes, shipments aggregated 6,999,500 cwts.

Shipments of pancake and waffle mixes in 1987 totaled 2,644,900 cwts, down 24% from 3,466,800 cwts five years earlier. According to the preliminary Census report, shipments of these mixes shifted from smaller to larger containers. Shipments in containers of 5 lbs or more totaled 1,914,500 cwts, up from 812,600 cwts in 1982; shipments in containers of less than 5 lbs were 730,400 cwts, down from 2,654,300 cwts in 1982.

Bread, roll mixes incomplete

Information on bread and bread-type roll mixes is incomplete, as the 1987 preliminary report withheld data on shipments in containers of less than 5 lbs to avoid disclosing information on individual companies. Shipments in containers of 5 lbs or more totaled 1,995,300 cwts. In 1982, shipments of bread and bread-type roll mixes in the larger containers were 1,749,600 cwts.

Shipment numbers for biscuit mixes also are incomplete because of withheld data. Biscuit mix shipments totaled at least 171,700 cwts in 1987, with information again withheld for shipments in containers of less than 5 lbs. In 1982, biscuit mix shipments in containers of 5 lbs or more totaled 521,400 cwts.

For pie crust mixes, the preliminary Census report placed shipments in 1987 at 226,400 cwts; data on this category were withheld in 1982.

The 1987 report for S.I.C. 2045 discloses shipment figures for one refrigerated dough category — "other doughs and batters, including pizza, coffee cake, pancake mix, cookie, etc." Shipments in this category were 281.1 million lbs, with no comparison for 1982 due to withheld data.

New frozen dough category

In the new frozen doughs and batters product category, shipments in 1987 aggregated 971 million lbs, including 470.2 million lbs of bread and bread-type roll dough, and 500.8 million lbs of "other frozen doughs and batters, including pizza, coffee cake, pancake mix, cookie, etc."

Information on value of shipments in S.I.C. 2045 is as fragmented as shipment data due to withheld information.

Other prepared flour mixes, including cookie mixes, accounted for the largest value of mix shipments in 1987 at $389 million, based on the limited information in the preliminary report.

Value of cake mix shipments, again with some data withheld, was at least $355.9 million in 1987. Shipments of donut and other sweet yeast goods mixes were valued at $168.1 million.

The preliminary Census report

placed value of pancake and waffle mix shipments in 1987 at $108.9 million. For bread and bread-type roll mixes, value of shipments in 1987 was at least $91.1 million, with some data withheld. Value of pie crust mix shipments in 1987 was $14.7 million; biscuit mix shipments were at least $6.1 million, with some information withheld.

In Flour and Other Grain Mill Products, S.I.C. 2041, comparisons also are limited on flour mixes and refrigerated and frozen doughs and batters produced in flour mills. Bread and bread-type roll mixes produced in flour mills is the only category with complete information for 1987. In other categories, some or all data were withheld to avoid disclosing information on individual companies.

The mix volume leader in S.I.C. 2041, based on the limited data presented for 1987, was pancake and waffle mixes. Shipments of this category totaled at least 1,653,800 cwts; data were withheld for shipments in containers of 5 lbs or more. In 1982, the aggregate was 881,400 cwts.

Shipments of bread and bread-type roll mixes in 1987 totaled 651,800 cwts, including 117,700 cwts of products shipped in containers of less than 5 lbs and 534,100 cwts in containers of 5 lbs or more. Shipment data for this category were withheld in the 1982 Census.

Downward trend in milling plant number slows

WHILE THE LONG-TERM downward trend in number of plants in the Flour and Other Grain Mill Products Industry, Standard Industrial Classification 2041, continued in the 1982-87 period, the rate of reduction was not as sharp as noted in previous Census of Manufactures reports.

MILLING CENSUS REPORT

The preliminary Census report for 1987 showed a total of 354 establishments in S.I.C. 2041, which includes both wheat flour and dry corn milling operations, only six fewer than in 1982. In earlier Census periods, total plant numbers decreased 47 between 1977 and 1982; 50 between 1972 and 1977; 84 between 1967 and 1972, and 196 between 1962 and 1967.

The 2% decrease in plant numbers in the Flour and Other Grain Mill Products Industry in 1982-87 contrasted with a 12% reduction in 1977-82, 11% in 1972-77, 16% in 1967-72 and 12% in 1962-67.

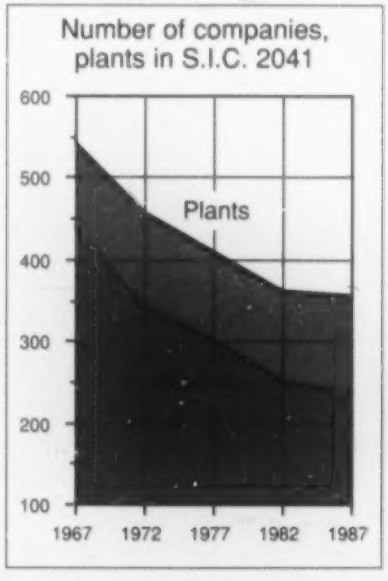
According to the preliminary Census report, the number of establishments with 20 or more employes in 1987 — 165 — was down nine from 174 in 1982. That reduction contrasted with an increase of one plant in the 1977-1982 period — the first gain in the number of establishments with 20 or more employes since plant compilations by employe size began in 1947. Flour and Other Grain Mill Products establishments with 20 or more employes numbered 173 in 1977, 181 in 1972 and 213 in 1967.

The preliminary Census report for 1987 showed a total of 111 companies and 147 plants in the Prepared Flour Mixes and Doughs Industry, S.I.C. 2045. Of the plant total, 96, or 65%, had 20 or more employes. Operational data from earlier Census reports are not comparable because of changes in the definition of S.I.C. 2045.

Company number down slightly

The number of companies in S.I.C. 2041 continued to decrease, according to the preliminary Census report, but also at a slower rate than in previous years. According to the preliminary Census, 235 companies were in business in the Flour and Other Grain Mill Products Industry in 1987, compared with 251 in 1982, 300 in 1977 and 340 in 1972.

Total value of all shipments by establishments classified in the Flour and Other Grain Mill Products Industry totaled $4,842.6 million in 1987, down 2% from $4,932.8 million in 1982. That decline in 1987, largely reflecting a decrease in cost of materials and ingredients (see Page 11-A), contrasted with a 34% increase in the 1982 Census and a 56% jump in the 1977 Census. The 1972 Census showed a 3% decline in value of shipments.



Value of shipments of products classified as primary to the industry (by all producers, regardless of industry classification) was $4,777.5 million in 1987, down 2% from $4,871.2 million in 1982 and compared with $3.6 billion in 1977.

In 1987, establishments in S.I.C. 2041 accounted for 60% of products considered primary to the industry. This coverage ratio calculation includes prepared mixes, doughs and batters from both S.I.C. 2041 and S.I.C. 2045 and thus is not directly comparable with previous Census reports.

Total value of all product shipments by establishments classified in the Prepared Flour Mixes and Doughs Industry totaled $2,759.2 million in 1987.

Employment at 13,300

Total employment and the number of production workers in S.I.C. 2041 in 1987 decreased at a sharper rate than the decline in plant numbers, according to the preliminary Census report. It placed total employment in the industry in 1987 at 13,300, down 12% from 15,100 in 1982 and compared with 15,600 in 1977 and 16,100 in 1972.

The 1987 employment number included 9,800 production workers, down 14% from 11,400 in 1982 and compared with 11,300 in 1977 and 11,900 in 1972.

In the newly defined S.I.C. 2045 employment totaled 12,200 in 1987, including 8,300 production workers.

New capital expenditures by the Flour and Other Grain Mill Products Industry in 1987 totaled $78.6 million, down 13% from $90.6 million in 1982. The latter aggregate was up 73% from $52.4 million in 1977. Capital spending by companies in S.I.C. 2045 was $66.9 million.

Historical statistics for S.I.C. 2041, 2045

(Data on value added, cost of materials and value of shipments are for all products, including those classified as secondary.)

Year	Companies (no.)	All establishments: Total (no.)	All establishments: With 20 employees or more (no.)	All employees: Number (1,000)	All employees: Payroll (million dollars)	Production workers: Number (1,000)	Production workers: Hours (millions)	Production workers: Wages (million dollars)	Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories (million dollars)	Ratios: Specialization (percent)	Ratios: Coverage (percent)
INDUSTRY 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS															
1987 Census	235	354	165	13.3	350.5	9.8	21.2	242.0	1 325.7	3 525.6	4 842.6	78.6	339.8	98	60
1986 ASM	(NA)	(NA)	(NA)	13.5	348.7	9.9	21.4	241.3	1 345.9	3 642.5	5 003.1	62.8	316.9	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	13.3	331.5	9.8	21.0	230.1	1 159.4	4 039.0	5 204.6	82.7	407.0	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	13.9	335.5	10.3	22.3	234.4	1 208.0	4 108.8	5 305.7	68.7	396.2	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	14.7	335.4	10.9	24.2	237.3	1 198.4	4 012.1	5 228.6	64.6	354.9	(NA)	(NA)
1982 Census	251	360	174	15.1	323.0	11.4	24.2	233.3	1 094.3	3 625.5	4 932.8	90.6	361.6	97	(NA)
1981 ASM	(NA)	(NA)	(NA)	15.8	305.7	11.6	26.1	214.6	1 113.7	4 169.1	5 313.8	67.3	362.3	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	15.5	273.9	11.3	25.6	195.7	1 030.4	4 119.8	4 835.4	53.3	439.6	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	15.3	255.5	11.2	25.2	181.3	942.5	3 281.2	4 218.3	68.4	402.0	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	15.1	241.6	11.1	24.4	168.5	845.3	2 934.3	3 760.9	56.9	303.8	(NA)	(NA)
1977 Census	300	407	173	15.6	222.3	11.3	24.6	153.4	824.5	2 854.2	3 663.3	52.4	263.2	98	(NA)
1976 ASM	(NA)	(NA)	(NA)	17.5	217.1	12.5	26.9	149.0	746.1	3 343.9	4 095.9	53.6	303.3	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	17.7	204.0	12.9	27.7	139.3	714.9	3 569.5	4 327.6	45.8	328.2	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	17.4	185.3	13.0	28.1	128.7	609.1	3 902.1	4 502.2	44.0	381.1	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	17.0	167.9	12.7	28.4	116.5	589.1	2 785.7	3 328.3	29.8	375.7	(NA)	(NA)
1972 Census	340	457	181	16.1	152.8	11.9	26.9	108.1	509.8	1 855.2	2 380.0	30.0	211.3	97	(NA)
INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS															
1987 Census	111	147	96	12.2	280.9	8.3	16.9	181.7	1 290.7	1 461.7	2 759.2	66.9	159.2	89	63

Lower grain costs cut total spending

DESPITE SIGNIFICANT increases in utilization of wheat and corn, the cost of all materials, ingredients, containers and supplies used by establishments in the Flour and Grain Mill Products Industry in 1987 for products considered primary to the industry was well below the 1982 level. Sharply lower grain costs were responsible, according to the preliminary Census of Manufactures report for S.I.C. 2041.

MILLING CENSUS REPORT

Total delivered cost of materials, ingredients, containers and supplies used by establishments in S.I.C. 2041 in 1987 for products considered primary to the industry aggregated $3,207.9 million, down 11% from $3,585.6 million in 1982 and compared with $2,707.4 million in 1977 and $1,804.1 million in 1972.

Use of wheat, corn increases

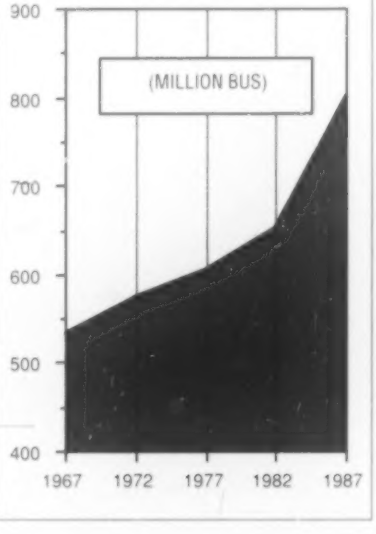
Mills in 1987 utilized 799 million bus of wheat, a 23% increase from 652.2 million bus in 1982 and compared with 605.2 million bus in 1977 and 573.2 million bus in 1972.

Delivered cost of wheat used by establishments in the Flour and Other Grain Mill Products Industry in 1987 totaled $2,344.4 million, down 12% from $2,655.8 million in 1982 and compared with $1,845.1 million in 1977 and $1,365.3 million in 1972.

At $2,344.4 million, the delivered cost of wheat in 1987 was $2.93 per bu, down from $4.07 per bu in 1982 and below $3.05 in 1977. The delivered cost of wheat in 1972 was $2.38 per bu; in 1967 it was $2.50 per bu.

A similar cost situation prevailed in the industry's use of corn, which increased for the first time since the 1963-67 Census period. Mills in 1987 utilized 108.2 million bus of corn, up 56% from 69.2 million bus in 1982. The latter figure was down from 83.4 million bus in 1977.

Use of wheat by S.I.C. 2041, Flour and Other Grain Mill Products



Delivered cost of corn used by mills in 1987 was $185.6 million, equal to $1.72 per bu, down from $198.4 million, or $2.87 per bu, in 1982. In 1977, delivered cost of corn was $188.5 million, or $2.26 per bu.

Reversal in wheat flour

Utilization of wheat flour by establishments in the Flour and Other Grain Mill Products Industry in 1987, according to the preliminary Census report, was 17,138,900 cwts, up 114% from 8,017,500 cwts in 1982. That increase from 1982-87 contrasted with the previous five-year Census period; usage in 1982 was down 16% from 9,588,200 cwts in 1977.

Delivered cost of wheat flour used by mills in 1987 was placed at $140.3 million, compared with $84.9 million in 1982 and $69.9 million in 1977.

The preliminary Census report showed that mills in 1987 utilized 16.6 million bus of oats with a delivered cost of $27.3 million.

Data on oat utilization in 1982 were withheld in the Census of Manufactures report to avoid disclosing information on individual companies; in

1977, mills used 19.5 million bus of oats; delivered cost was $32.3 million.

Barley use down 38%

Utilization of barley by the Flour and Other Grain Mill Products Industry in 1987 totaled 800,000 bus, down 38% from 1.3 million bus in 1982 and compared with 5.3 million bus in 1977.

Data on utilization of sugar (cane and beet) by establishments in the Flour and Other Grain Mill Products Industry in 1987 were withheld in the preliminary Census report because the estimate did not meet publication standards on the basis of either the response rate or a consistency review. In 1982, sugar utilization by the Flour and Other Grain Mill Products Industry aggregated 91,500 tons.

Mills used 41.8 million lbs of fats and oils in flour and prepared flour mixes in 1987, with a delivered cost of $22.2 million. In 1982, mills used 77.4 million lbs of fats and oils; in 1977, utilization totaled 56 million lbs.

Shipping, packaging items

Establishments in the Flour and Other Grain Mill Products Industry in 1987 used 521.8 million paper shipping sacks with a delivered cost of $98.1 million, according to the preliminary Census report. Data on usage of paper shipping sacks were withheld from publication in the 1982 Census; delivered cost of these sacks was $39.2 million.

Mills used 64.8 million textile bags, including burlap, cotton and polypropylene, in 1987, up 7% from 60.6 million in 1982 and compared with 56 million in 1977. The preliminary report placed delivered cost of textile bags in 1987 at $15.9 million, compared with $16.8 million in 1982 and $17.2 million in 1977.

The preliminary report showed that delivered cost of paperboard containers, boxes and corrugated paperboard used by mills in the Flour and Other Grain Mill Products Industry in 1987 aggregated $25.1 million, against $27 million in 1982 and $8 million in 1977.

Data for new S.I.C. 2045

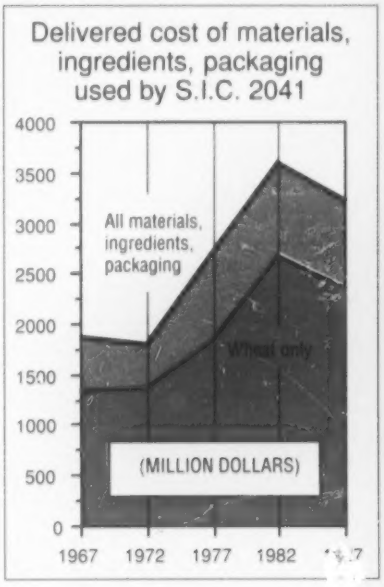
Utilization of wheat flour by establishments in the newly defined Prepared Flour Mixes and Doughs Industry, S.I.C. 2045, totaled 35,285,500 cwts in 1987, with a delivered cost of $337.1 million.

In the 1982 Census, utilization of wheat flour in S.I.C. 2045, then known as Blended and Prepared Flour and not including frozen doughs and batters, aggregated 12,153,600 cwts.

Establishments in S.I.C. 2045 used 664.3 million cwts of non-wheat flour and prepared flour mixes in 1987, with a delivered cost of $37.1 million. These plants used 205.2 million tons of sugar and 181.4 million lbs of fats and oils.

Delivered cost of flexible packaging materials used by plants in S.I.C. 2045 in 1987 was $17.7 million; delivered cost of paperboard containers, boxes and corrugated paperboard totaled $89.9 million.

Delivered cost of all materials, ingredients, containers and supplies used by S.I.C. 2045 plants in 1987 aggregated $1,324.8 million.



Ingredients, materials consumed

Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry.

1987 material code	Material		1987 Quantity	1987 Delivered cost (million dollars)	1982 Quantity	1982 Delivered cost (million dollars)
	INDUSTRY 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS					
	Materials, ingredients, containers, and supplies		(X)	**3 207.9**	(X)	**3 585.8**
	Grain:					
011111	Wheat	mil bushels	799.0	2 344.4	652.2	2 655.8
011521	Corn	do	108.2	185.6	69.2	198.4
011931	Oats	do	16.6	27.3	(D)	(D)
011913	Barley	do	.8	1.6	1.3	3.6
011961	Sorghum	do	(S)	4.5	(D)	(D)
204110	Wheat flour	1,000 cwt	17 138.9	140.3	8 017.5	84.9
208011	Sugar (cane and beet) in terms of sugar solids	1,000 s tons	(S)	25.2	91.5	44.1
207003	Fats and oils for use in flour and prepared flour mixes	mil lb	41.8	22.2	77.4	25.5
239303	Textile bags (including burlap, cotton, polypropylene, etc.)	mil bags	64.8	15.9	60.6	16.8
267420	Paper shipping sacks	mil sacks	521.8	98.1	(S)	39.2
265001	Paperboard containers, boxes, and corrugated paperboard		(X)	25.1	(X)	27.0
970099	All other materials, ingredients, containers, and supplies		(X)	139.7	(X)	286.9
971000	Materials, ingredients, containers, and supplies, n.s.k.		(X)	178.0	(X)	151.2
	INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS					
	Materials, ingredients, containers, and supplies		(X)	**1 324.8**	(NA)	(NA)
204110	Wheat flour	1,000 cwt	35 285.5	337.1	(NA)	(NA)
204001	Flour, other than wheat, and prepared flour mixes	do	664.3	37.1	(NA)	(NA)
206011	Sugar (cane and beet)	1,000 s tons	205.2	101.0	(NA)	(NA)
207003	Fats and oils for use in flour and prepared flour mixes	mil lb	181.4	47.4	(NA)	(NA)
190003	Flexible packaging materials		(X)	17.7	(NA)	(NA)
265001	Paperboard containers, boxes, and corrugated paperboard		(X)	89.9	(NA)	(NA)
970099	All other materials, ingredients, containers, and supplies		(X)	528.4	(NA)	(NA)
971000	Materials, ingredients, containers, and supplies, n.s.k.		(X)	166.5		

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Milling & Baking News

Weekly Since 1922

Volume 69 Number 27 | September 4, 1990 | Sixty-Seven Dollars Per Year

OSHA to draft ergonomic plan for plants in all industries

WASHINGTON, Sept. 4. — In a move that had been anticipated in wholesale baking for more than a year, Secretary of Labor Elizabeth Dole last week said the Department of Labor would launch a major initiative to reduce repetitive motion trauma in American industry.

Secretary Dole said the Occupational Safety and Health Administration was immediately publishing ergonomic guidelines for plants in the red meat industry and would begin formal rule-making procedures to cover all U.S. industries.

Describing repetitive motion trauma as "one of the nation's most debilitating across-the-board worker safety and health illnesses of the 1990s," Mrs. Dole added, "These painful and sometimes crippling illnesses now make up 48% of all recordable industrial workplace illnesses. We must do our utmost to protect American workers from these hazards."

Year-ago start by A.B.A.

The board of directors of American Bakers Association, in a meeting last September in Las Vegas, established a generic ergonomic program for wholesale baking as recommended by the A.B.A. Ergonomic Task Force. Dan Macleod, president of Ergo-Tech, Inc., an ergonomic consulting concern based in Minneapolis, was retained at that Las Vegas meeting as A.B.A.'s ergonomic consultant.

Mr. Macleod said Friday that the OSHA

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ON THE INSIDE

Strength at General Mills 27
Annual report says business structure of General Mills "never stronger," outlook for each of key businesses is promising.

Serving size questioned 20
Wholesale bakers oppose plan by Food and Drug Administration to change standard serving size in bread labeling to 2 ozs.

Average wheat price dips 18
U.S.D.A. places national average price for wheat in August at $2.59 per bu, off 20c from previous month and lowest since 1987.

Ingredient week 10

In this week's issue:

BAKING CENSUS REPORT

LATE NEWS HIGHLIGHTS

W.S.U. establishes endowed chair in wheat breeding

OLYMPIA, WASH., Sept. 4. — The Orville A. Vogel Endowed Chair in Wheat Breeding and Genetics has been established at Washington State University in honor of the retired U.S. Department of Agriculture wheat breeder who was stationed at W.S.U. for 42 years. Mr. Vogel developed the first commercially successful semi-dwarf wheat varieties in the northern hemisphere and shared this germplasm with Norman Borlaug, whose breeding work led to increased wheat yields around the world. The establishment of the endowed chair culminated more than two years of activity by W.S.U. and wheat industry leaders. The industry raised $500,000 and another $500,000 was allocated by the state legislature from the Washington State Distinguished Professor Matching Grant Program. W.S.U. hopes to raise an additional $500,000 to bring the endowment to $1.5 million by 1992, at which time the department expects to fill the position. Creation of the endowed chair will stimulate research in wheat breeding.

British Sugar to be sold through 'auction'

LONDON, Sept. 4. — Berisford International accepted the recommendation of Schroders, its merchant bank advisers, that an "auction" be conducted to obtain the highest price possible in the sale of its British Sugar subsidiary. British Sugar, the U.K. beet sugar refining monopoly operating as Bristar, will be offered through a document that is scheduled for release before mid-month. Berisford's aim is to realize sufficient proceeds to allow the easing of its heavy debt burden incurred mainly on account of unsuccessful real estate investments in the United States. Schroders said that it received "a lot of inquiries" regarding the possible sale of Berisford's food businesses. It said the information memorandum "will enable a wide range of potential purchasers to indicate their possible levels of interest within a properly structured sale process." Frequently mentioned as the most likely buyer was Associated British Foods, the company controlled by

Continued on Page 10

Sara Lee introduces 'healthy' retail, food service product line

DEERFIELD, ILL., Sept. 4. — Banking on projections that the overall "healthy" foods segment will reach $36 billion in sales by 1994, Sara Lee Bakery has developed a new line of frozen baked foods that is 98% fat free, cholesterol free, low in sodium and contains one-third fewer calories.

The line is viewed as a significant product introduction for Sara Lee Bakery, which was criticized earlier this year by John H. Bryan, the chairman of the parent Sara Lee Corp., as "not adequately responding to the 'good for you' trend" in food products (see *Milling & Baking News* of Feb. 27, Page 14.) Two months later, Thomas D. MacLeod Jr. resigned as president and chief executive officer of Sara Lee Bakery.

In the fresh sweet goods arena, Entenmann's, Inc., part of Kraft General Foods, launched a 12-item line of fat-free, choles-

Continued on Page 13

While confident they would be able to find adequate quantities of milling quality soft red, wheat buyers faced as stiff a challenge this year as any in memory. Flour millers often were limited in their ability to discount off-grade wheat by unusually strong feed demand for No. 3 soft red.

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BAKING CENSUS REPORT

(BREAD AND CAKE AND FROZEN)

Milling & Baking News

Eagle
BAKING INGREDIENTS

Census shows healthy gains in bread, cake

The 1987 Census of Manufactures for the Bread, Cake and Related Products Industry underscored marked improvement in almost all measures of the overall health of the baking business. The Census, conducted every five years, affirmed a robust increase in the volume of products shipped and a continuing emphasis on higher-margin products, and disclosed the first increase in number of companies and plants in the wholesale bread and cake business in at least 40 years.

BAKING CENSUS REPORT

Highlights of the 1987 Census, as detailed in this special section, include the following:

- Shipments of white pan bread increased for the first time in almost 25 years.
- Shipments of all products on a combined basis increased 18%, contrasted with a decrease of 1.4% noted in the previous Census.
- The volume gap between variety bread and white bread narrowed, but the sharpest rate of increase was in shipments of bread-type rolls.
- Snack cakes led major individual product performance with an impressive shipment increase of 54%, largely attributed to growing popularity of muffins.
- While supermarket bakeries gained market share on the strength of supplying in-store operations, wholesale bakeries continued as the dominant force in the bread and cake industry, accounting for 84% of total value of shipments and 85% of total value added by manufacture.
- The number of plants and companies in the bread and cake industry increased 23% from $13,143.3 million in 1982 and compared with $9,274.9 million in 1977. Value added by manufacture, judged by the Bureau of the Census as "the best value measure available for comparing the relative economic importance of manufacturing," continued to increase at a greater rate than value of shipments. Value added in the Bread, Cake and Related Products Industry in 1987 totaled $10,532.9 million, up 34% from $7,861.1 million in 1982.

While the percentage increases in value of shipments and value added by manufacture in 1987 (23% and 34%, respectively) were smaller than noted in the 1982 Census (42% and 46%, respectively), the latter Census reflected higher inflation rates. During the 1977-82 period, the Producer Price Index for Bakery Products increased 47%. By way of contrast, the same index in the 1982-87 period increased only 18%.

While further changes in product classifications in the 1987 Census complicate

nated in Standard Industrial Classification 2051 as well as those classified in other industries — totaled an estimated 20,584,000,000 lbs in 1987. That was up 3,179,000,000 lbs, or 18%, from 17,405,000,000 lbs in the 1982 Census.

All bread shipments in 1987 were up 18% in pounds, a marked contrast from the decline of 1.4% in 1982 from 1977.

White bread remained the leading product of the Bread, Cake and Related Products Industry in both poundage and dollar value, but the category's share of the total market continued to be challenged by increasing shipments of variety bread.

According to the Census report, shipments of white bread in 1987 gained 6%, the first upturn in almost 25 years. Variety bread continued its strong performance, with 1987 shipments up 31% from 1982.

On the basis of value of shipments, white bread accounted for 22% of total bread and cake shipments in 1987, bread, up 50%, and other variety bread, including raisin, potato, salt-rising, salt-free and canned, up 61%.

The Census showed that shipments of bread-type rolls in 1987 increased at a sharper rate than bread. Shipments of bread-type rolls were up 26% from 1982.

All six product lines in the bread-type roll category posted poundage gains in 1987 from 1982, led by hearth rolls, up 17%, and hamburger and wiener rolls, up 15%. The latter continued to be the largest volume bread-type roll product and the second-largest volume product in the Bread, Cake and Related Products Industry.

The Census report again showed a mixed performance for sweet goods, with 1987 shipments increasing for soft cakes and sweet yeast goods, including yeast-raised donuts, sweet rolls and coffee cakes, and decreasing in pies and cake-type donuts.

The 1987 Census showed a significant variation in the share-of-market battle between the two major segments of the Bread, Cake and Related Products Industry — Wholesale Bakeries and Grocery Chain Bakeries.

Lower wholesale share

Wholesale Bakeries accounted for 84% of the industry's value of shipments in 1987 and 85% of value added by manufacture, the lowest share of the market in almost 25 years, or since the 1963 Census. These percentages compared with 90% and 91%, respectively, in the 1982 Census.

Grocery Chain Bakeries increased their share of value of shipments and

Baking Census at a glance . . .

Plant, company numbers increase, reversing trends ..... Page 5-A
White bread shipments up; variety bread narrows gap ..... Page 7-A
Capital spending increases 36%; more on equipment ..... Page 16-A
Wheat flour usage climbs to apparent record ..... Page 17-A
Soft cakes, cake donuts buck frozen product decline ..... Page 19-A

Advertising sponsor: Eagle Baking Ingredients ..... Pages 9A-12A, 20-A

the first time since the current definition of wholesale baking was adopted in 1947.

Shipment value increases 23%

Total value of all product shipments for the 2,357 plants classified in the Bread, Cake and Related Products Industry in 1987 was $16,202.1 million, up comparisons of poundage shipments with 1982 and earlier Census reports, total shipments of bread, cake and roll products, on the basis of 1987 product listings, recorded a healthy increase.

Bread, cake shipments up 18%

Shipments of Bread, Cake and Related Products by all plants — those desig- compared with 24% in 1982, 28% in 1977 and 33% in 1972.

While shipments of variety bread continued to gain on white bread, the 31% advance in 1987 from 1982 was smaller than earlier increases of 54% in 1982 from 1977 and 151% in 1977 from 1972. Leading advances in shipments within the variety bread category were hearth value added by manufacture at the expense of Wholesale Bakeries. Grocery Chain Bakeries accounted for 15% of both the industry's value of shipments and value added by manufacture in 1987.

This marked the largest market share for Grocery Chain Bakeries in the history of Census calculations and apparently reflected increased shipments of frozen

Historical statistics for bread, cake industry

Year[1]	Companies[2] (no.)	All establishments[3]		All employees		Production workers			Value added by manufacture[4] (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories[4] (million dollars)	Ratios	
		Total (no.)	With 20 employees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Specialization[5] (percent)	Coverage[6] (percent)
INDUSTRY 2051, BREAD, CAKE, AND RELATED PRODUCTS															
1987 Census	1 947	2 357	1 031	161.6	3 558.0	96.5	166.9	1 714.1	10 532.9	5 670.6	16 202.1	519.3	350.3	97	99
1986 ASM	(NA)	(NA)	(NA)	153.4	3 371.2	91.9	159.9	1 663.3	9 585.8	5 585.9	15 148.2	408.7	325.8	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	162.1	3 513.4	92.7	156.9	1 624.0	8 910.8	5 576.8	14 398.5	378.0	330.1	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	162.1	3 398.5	94.8	164.2	1 589.6	8 304.9	5 403.1	13 701.5	406.4	330.8	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	160.9	3 249.7	93.2	166.1	1 562.2	8 020.1	5 274.5	13 293.4	294.2	318.2	(NA)	(NA)
1982 Census	1 899	2 305	1 074	170.7	3 234.3	99.0	174.5	1 522.9	7 961.1	5 282.7	13 143.3	382.4	305.7	97	98
1981 ASM	(NA)	(NA)	(NA)	176.1	3 087.3	97.5	186.0	1 494.4	7 218.5	5 279.7	12 493.8	287.8	309.5	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	181.9	2 923.7	101.9	204.5	1 407.9	6 738.5	4 976.1	11 703.1	258.6	288.1	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	184.4	2 730.2	101.9	203.5	1 316.3	6 224.5	4 515.3	10 737.7	230.4	281.5	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	179.2	2 572.2	96.0	186.5	1 251.7	5 686.5	4 132.8	9 817.3	324.3	251.7	(NA)	(NA)
1977 Census	2 549	3 082	1 117	178.0	2 395.8	97.4	191.7	1 182.5	5 370.4	3 999.0	9 274.9	290.4	226.1	99	99
1976 ASM	(NA)	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	191.4	1 788.5	109.7	218.4	917.9	3 590.7	3 085.0	6 679.7	143.8	173.4	(NA)	(NA)
1972 Census	2 601	3 323	1 379	193.6	1 662.2	109.6	219.3	876.2	3 516.1	2 615.0	6 132.0	170.6	137.6	99	99

In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1972, see 1972 Census of Manufactures, vol. II, table 1a of the industry chapter.

[1]For the Census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

[2]Includes establishments with payroll at any time during year.

[3]Beginning with the 1982 Census of Manufactures, all respondents were requested to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior Censuses and annual surveys of manufactures in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, inventories and value added by manufacture are not comparable to prior-year data.

[4]Represents ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for establishments classified in the industry.

[5]Represents ratio of primary product shipments by establishments classified in industry to total shipments of such products by all establishments, whether classified

Key operating ratios for bread, cake industry

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
	INDUSTRY 2051, BREAD, CAKE, AND RELATED PRODUCTS								
1987 Census	22 004	84	1 [illegible]	10.12	36	67	66 066	34	62.17
1986 ASM	21 876	83	1 [illegible]	10.40	37	69	62 478	35	59.36
1985 ASM	21 [illegible]	81	1 [illegible]	10.16	38	69	54 354	40	53.10
1984 ASM	20 [illegible]	82	1 [illegible]	9.56	38	64	51 233	41	50.56
1983 ASM	20 197	82	1 880	8.34	40	64	49 648	41	48.29
1982 Census	19 042	82	1 891	8.72	40	66	45 [illegible]	41	45.05
1981 ASM	17 891	85	2 031	7.56	42	67	40 991	43	38.46
1980 ASM	16 073	86	2 007	6.86	43	68	36 879	43	32.09
1979 ASM	14 805	85	1 997	6.49	43	67	33 726	44	30.58
1978 ASM	14 359	84	1 974	6.01	42	66	31 733	46	30.01

dough and other products for in-store supermarket bakeries.

Retail Multi-Outlet Bakeries accounted for 1% of value of shipments and less than 1% of value added in 1987, largely unchanged from 1982.

While the 1987 valued added total for Grocery Chain Bakeries of $1,535.3 million remained small in comparison with the $8,921.3 million figure for Wholesale Bakeries, grocery chain baking operations posted an upturn of 142% from 1982.

That was well above the 25% gain for wholesale baking and the 34% increase for the industry overall.

The sharp increase in value added by manufacture for Grocery Chain Bakeries continued to indicate a shift in that segment's product mix to higher value-added products.

Similarly, Grocery Chain Bakeries recorded a 104% increase in value of shipments in 1987, compared with a 16% gain for Wholesale Bakeries and 23% for the industry overall.

Continued wholesale dominance

Although 1987 figures for Grocery Chain Bakeries were impressive, the data for the different sectors of the industry continued to reaffirm the dominance of Wholesale Bakeries. This segment of the Bread, Cake and Related Products Industry in 1987 accounted for 84% of the value of shipments, 89% of total employes and 89% of the total payroll for the industry. Grocery Chain Bakeries, with 15% of value of shipments, accounted for 9% of the employes and 10% of the total payroll. Wholesale Bakeries accounted for 86% of the number of production workers, whereas Grocery Chain Bakeries employed 13% of the industry total.

By way of comparison, Wholesale Bakeries in 1982 accounted for 91% of total employes in S.I.C. 2051, 91% of total payroll and 88% of total production workers. Grocery Chain Bakeries in 1982 accounted for 7% of total employes, 8% of total payroll and 10% of total production workers.

Data on fringe benefits included

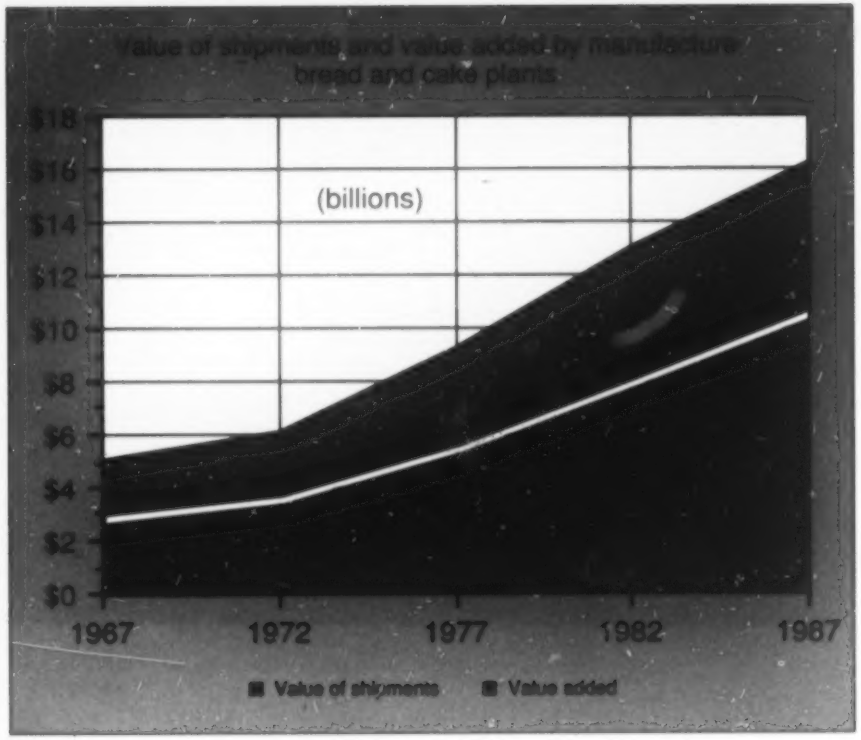
For the first time, the 1987 Census provided data on fringe benefits, including Social Security and other legally required payments, as well as employer payments and other programs. The inclusion of the fringe benefit data in the 1987 Census was regarded by many observers as one of the more timely additions in recent years because of the growing cost of these programs, which include health care.

According to the Census, plants in the Bread, Cake and Related Products Industry in 1987 spent $4,559.4 million in compensation for the 161,600 employes, or approximately $28,214 per employe annually. Of that compensation, annual

classified as primary to the Bread, Cake and Related Products Industry was 24% above 1982, compared with a 23% increase in value of shipments of all products. That was in contrast with 1982, when the value of primary product shipments was 38% above 1977 levels, and the value of all product shipments was up 42%.

Industry shipments, which totaled $16,202.1 million in 1987, compared with $13,143.3 million in 1982, represent the aggregate value of shipments of all establishments classified in the industry. The 1987 aggregate included $13,308.3 million in products classified in the industry (primary); $411.8 million of products classified in other industries (secondary), and $2,482 million in miscellaneous receipts.

Unlike previous years, the 1987 Census did not provide details on value of shipments of products classified as primary to the Bread, Cake and Related



payroll totaled $3,556 million, or 78%; fringe benefits totaled $1,003.4 million, or 22% of the aggregate.

Of the total fringe benefit costs in 1987, Social Security and other legally required payments accounted for $351.3 million, or 35% of the total, while employer payments and other programs were $652.1 million, or 65% of the total.

Value added by manufacture in 1987 represented 65% of the industry's value of shipments, up from 60% in 1982, 58% in 1977, 57% in 1972, 54% in 1967 and 53% in 1963.

Value of 1987 shipments of products Products Industry but shipped by other industries, such as the Cookie and Cracker Industry, S.I.C. 2052. Nor did it identify the secondary products shipped by plants in S.I.C. 2051.

The industry's specialization ratio in 1987 for primary products was 97%, unchanged from 1982 and compared with 99% in 1977. Establishments in the Bread, Cake and Related Products Industry in 1987 accounted for 99% of the shipments of products considered primary to the industry. That coverage ratio was up from 98% in 1982 and 1977 and compared with 99% in 1972 and 1967.

Value of shipments by bread, cake sectors

	1987	(%)	1982	(%)	1977	(%)	1972	(%)	1967	(%)
					(millions of dollars)					
Total	$16,202	(100)	$13,143	(100)	$9,275	(100)	$6,153	(100)	$5,103	(100)
Wholesale	13,681	(84)	11,837	(90)	8,348	(90)	5,321	(86)	4,401	(86)
Grocery chain	2,390	(15)	1,172	(9)	756	(8)	652	(11)	468	(9)
Home service	n.a.		n.a.		n.a.		5	(...)	98	(2)
Retail multi-outlet	132	(1)	134	(1)	171	(2)	176	(3)	135	(3)

Value added by manufacture by bread, cake sectors

	1987	(%)	1982	(%)	1977	(%)	1972	(%)	1967	(%)
					(millions of dollars)					
Total	$10,533	(100)	$7,861	(100)	$5,370	(100)	$3,518	(100)	$2,753	(100)
Wholesale	8,921	(85)	7,150	(91)	4,893	(91)	3,073	(87)	2,390	(87)
Grocery chain	1,535	(15)	634	(8)	371	(7)	337	(10)	229	(8)
Home service	n.a.		n.a.		n.a.		3	(...)	58	(2)
Retail multi-outlet	76	(...)	77	(1)	107	(2)	117	(3)	75	(3)

Plant numbers increase, reversing longtime decline

BAKING CENSUS REPORT

Encouraging signs of increased interest and participation in the Bread, Cake and Related Products Industry was evident in the 1987 Census data. Both the number of companies and the number of plants increased for the first time since the U.S. Department of Commerce adopted its current definition of wholesale baking in 1947.

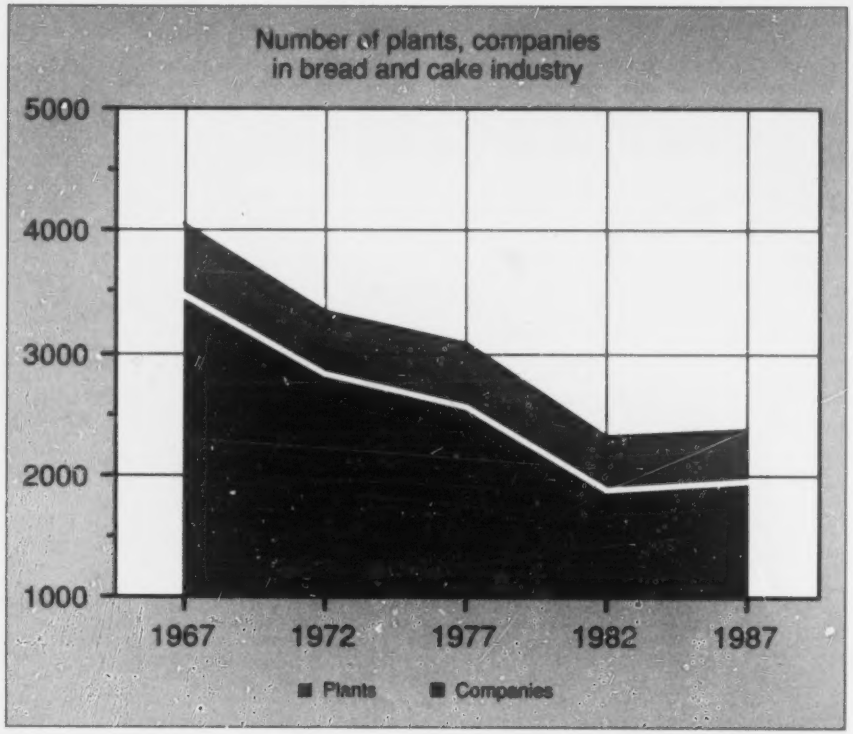
The 4% increase in number of companies in the industry in 1987 from 1982, and the 2% increase in number of plants, halted longstanding downward trends in both measures of baking activity.

While the increase in company numbers was revealed in the preliminary report, the accompanying increase that occurred in plant numbers was not disclosed until the final report included upward revisions in that measure.

Interestingly, the majority of the plant number increase in 1987 from 1982 was in bread and cake baking plants with fewer than 20 employes, apparently reflecting start-up of baking plants specializing in one product or in one-market distribution. That was in contrast with 1982, when a large share of the overall decrease in total plant numbers — down 757 plants between 1977 and 1982 — was concentrated in those smaller plants.

According to the 1987 Census, plants with fewer than 20 employes represented 56% of all plants in the industry while plants with 100 or more employes accounted for 18% of the total. Those percentages compared with 53% and 22%, respectively, in 1982.

For the first time, the 1987 Census expanded its plant size classifications to include a category for plants with 2,500 or more employes. In previous reports, the largest plant size category had been



plants with 1,000 to 2,499 employes.

The share of value of shipments among the four general plant size categories in 1987 was relatively unchanged from 1982.

The 425 plants in the Bread, Cake and Related Products Industry with more than 100 employes — 18% of the industry plants — accounted for 86% of the industry's value of shipments, or $13.9 billion of the $16.2-billion aggregate. That 86% share was unchanged from 1982 and was up from 83% in 1977, 81% in 1972, 79% in 1967 and 74% in 1963.

Value of shipment market shares for plants with fewer than 20 employes, 20 employes accounted for 7% of total industry shipments in 1987, unchanged from 1982 and compared with 9% in 1977, 10% in 1972 and 11% in 1967.

In analyzing industry sectors within S.I.C. 2051, the 361 wholesale plants with 100 or more employes accounted for 85% of the total plants in that size category.

The 1987 Census, unlike earlier Census reports, did not provide value of shipment data on the basis of plant size within the various industry sectors.

The 1987 Census of Manufactures showed one baking plant in the new size category of 2,500 or more employes, the to avoid disclosing information for individual companies.

According to the 1987 Census, there were seven plants in the 1,000 to 2,499 employe size category, up from four in 1982. These seven plants in 1987 had aggregate product shipments valued at $1,378.1 million, or an average of $196.9 million per plant. That $1,378.1-million total for those seven plants was larger than the $378.8-million value of shipments in 1987 by the 1,326 baking plants with fewer than 20 employes. The aggregate also exceeded the total value of shipments of $738 million by the 392 plants with 20 to 49 employes.

According to the Census, there were 1,947 companies in the Bread, Cake and Related Products industry in 1987, up 78, or 4%, from 1,869 companies in 1982 and compared with 2,549 companies in 1977 and 2,801 in 1972. The Census defines a company as "a business organization consisting of one establishment or more under common ownership or control."

The Census counted a total of 2,357 bread and cake plants in 1987, compared with 2,305 in 1982, 3,062 in 1977 and 3,323 in 1972.

Of the bread and cake plants in the 1987 Census of Manufactures, a total of 1,031 were in the 20-or-more-employe category, while 1,326 were in the smaller size grouping. In the 1982 Census, 1,074 plants were counted in the larger category and 1,231 in the small plant grouping. Thus, the 1987 Census showed a decrease of 43 plants, or 4%, in the 20-or-more-employe category, and an increase of 95, or 8%, in the smaller plants.

The increase of 52 plants recorded in 1987 contrasted with a drop of 757 plants in the 1977-82 period, a decline of 261 and cake plants with 100 or more employes, down 15% from 501 in 1982. Plant numbers in all other size categories increased from 1982. Plants with fewer than 20 employes, 20 to 49 employes and 50 to 99 employes increased 8%, 7% and 3%, respectively.

The 1987 Census was the third to measure the number of companies shipping $100,000 or more of principal baked food products. The listing, which includes duplication in numbers because many companies ship in excess of $100,000 of more than one product, showed that 125 companies in 1987 shipped white pan bread in that value category. That was down from 168 in 1982. Decreases also were noted in number of companies shipping wholewheat, cracked wheat and multi-grain bread, and hamburger and wiener rolls with value of more than $100,000.

Increases included the number of com-

Number of companies shipping $100,000 or more of products

	1987	1982
White pan bread	125	168
White hearth bread	149	149
Whole-wheat, cracked	117	130
Rye, pumpernickel	98	110
Other variety bread	78	91
Hamburger, weiner rolls	130	152
Brown and serve rolls	61	60
English muffins	38	41
Hearth rolls	75	77
Other bread-type rolls	158	115
Bread stuffing, croutons	42	43
Yeast-raised donuts	67	94
Other sweet yeast goods	88	121
Snack cakes	47	49
Fruit cakes, holiday-type	29	26
All other soft cakes	96	114
Snack pies	35	41
Other fruit, custard pies	50	58
Pastries	29	36
Cake-type donuts	57	78

to 49 employes and 50 to 99 employes also were relatively unchanged from 1982 levels.

The 1,326 plants with fewer than 20 employes, while representing 56% of plant numbers, accounted for only 2% of the industry value of shipments. That share was unchanged from 1982 and down from 4% in 1977, 1972 and 1967.

Baking plants with 20 to 49 employes — a total of 392 in 1987 — accounted for 5% of the industry's value of shipments, up from 4% in 1982 and 1977 and the same as 1972.

The 214 baking plants with 50 to 99 largest of 10 Census plant size classifications. Data for that single plant with 2,500 or more employes were withheld plants in the 1972-77 period and a 719-plant decrease in the 1967-72 period.

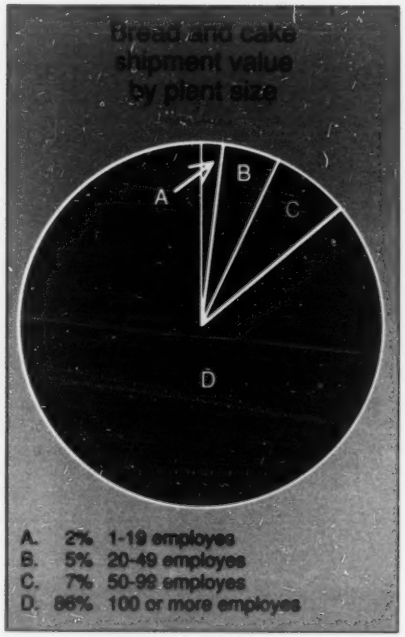
The 1987 Census counted 425 bread panies shipping $100,000 or more of brown and serve rolls and other rolls, including bagels and croissants.

Bread, Cake and Related Products baking plants by employe size

	1987	1982	1977	1972	1967	1963	1958
1-19 employes	1,326	1,231	1,945	1,944	2,434	3,106	3,836
20-99 employes	606	573	561	766	913	1,212	1,441
100 or more	425	501	556	613	695	692	708
Total plants	2,357	2,305	3,062	3,323	4,042	5,010	5,985

Wholesale baking plants by employe size

	1987	1982	1977	1972	1967	1963	1958
1-19 employes	1,319	1,215	1,914	1,900	2,364	2,741	3,443
20-99 employes	547	514	491	641	773	990	1,204
100 or more	361	440	495	536	614	556	552
Total plants	2,227	2,169	2,900	3,077	3,751	4,287	5,199



Share of bread, cake shipments by plant size

	All establishments			Establishments with 1-19 employes			Establishments with 20-99 employes			Establishments with 100 or more employes		
	Number	Shipments value (millions)	% of industry shipments value	Number	Shipments value (millions)	% of industry shipments value	Number	Shipments value (millions)	% of industry shipments value	Number	Shipments value (millions)	% of industry shipments value
1987	2,357	$16,202.1	100%	1,326	$378.7	2%	606	$1,944.5	12%	425	$13,878.9	86%
1982	2,305	13,143.3	100%	1,231	307.7	2%	573	1,535.7	12%	501	11,300.0	86%
1977	3,062	9,274.9	100%	1,945	343.8	4%	561	1,216.7	13%	556	7,714.4	83%
1972	3,323	6,152.6	100%	1,944	235.8	4%	766	980.7	16%	613	4,956.1	81%
1967	4,042	5,102.6	100%	2,434	205.9	4%	913	844.1	17%	695	4,052.6	79%
1963	5,010	4,505.9	100%	3,106	236.6	5%	1,212	925.3	21%	692	3,344.0	74%

White bread increase first in almost 25 years

Several firsts were reflected in production data for the Bread, Cake and Related Products Industry in 1987, including the first increase in white bread shipments in almost 25 years and a record in all bread product shipments.

BAKING CENSUS REPORT

Shipments of white pan bread in 1987 were up 6% from 1982. Since reaching a peak of 9,002.2 million lbs in 1963, shipments of white pan bread had been in a downward trend.

Total bread shipments by all producers in 1987 totaled 11,629.2 million lbs, 6% higher than the previous peak of 11,015.8 million lbs in 1963.

The 1987 Census showed that variety bread shipments by plants in the Bread, Cake and Related Products Industry, up 31% and representing 42% of the total bread shipments, further narrowed the gap between white pan bread, which had a market share of 58%. In 1982, the variety bread and white bread market shares were 37% and 63%, respectively.

While bread continued to be the dominant category in product shipments and value of product shipments, the percentage increase in bread-type roll shipments out-paced this growth with a 26% increase in 1987 from 1982. Bread shipments increased 15% from 1982.

Separate categories in the bread-type roll segment were created for bagels and croissants beginning in 1987. In previous years, those two products were grouped together under "other bread-type rolls."

Shipments in 1987 of sweet goods showed mixed performance. Shipments of yeast-raised donuts, sweet rolls and coffee cakes, and soft cakes were above 1982 levels; shipments of cake-type donuts and pies were lower.

According to the Census, total bread

shipments by all producers in 1987 aggregated 11,629.2 million lbs, up 15% from 10,123.1 million lbs in 1982 and compared with 10,271.7 million lbs in 1977. The 1987 total was up 6% from the peak of 11,015.8 million lbs in 1963.

Shipments of white pan bread in 1987 were up 6% from 1982, marking the first increase in these shipments in almost 25 years. White pan bread shipments in 1987 totaled 6,774.7 million lbs, compared with 6,410.2 million lbs in 1982 and 7,321.6 million lbs in 1977.

While white pan bread continued to be baking's leading product in poundage, percentage increases in shipments of variety bread, including white hearth, whole-wheat, rye and other bread, outpaced the white pan bread performance, thus narrowing the longstanding gap between these two bread categories.

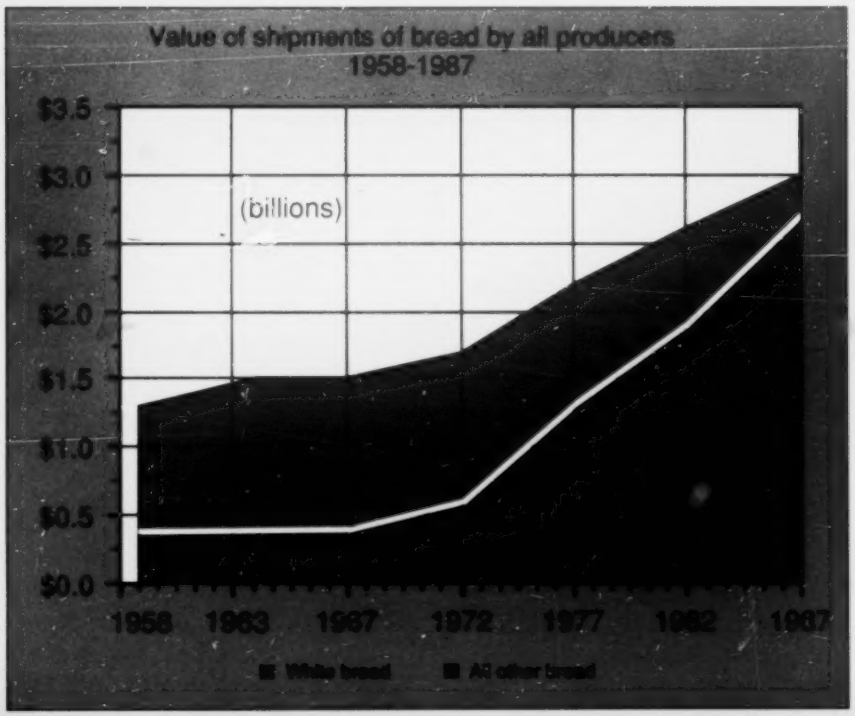
According to the Census, shipments of all variety bread in 1987 totaled 4,854.5 million lbs, up 31% from 1982 shipments of 3,712.9 million lbs and compared with 2,950.1 million lbs in 1977.

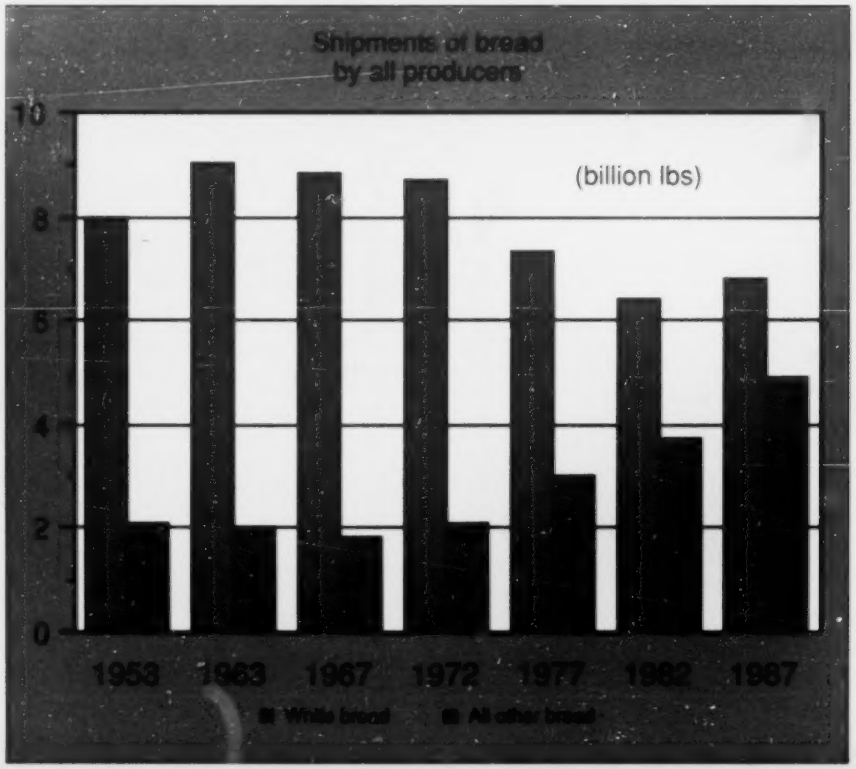
All types of variety bread showed double-digit percentage increases in poundage shipments in 1987. After slowing in 1982, shipments of white hearth bread were up 50% in 1987. Shipments in this category were 1,374 million lbs, up from 918.8 million five years earlier. In 1982, shipments of white hearth bread increased only 4%, or 38.9 million lbs, from 1977 while the 1977 Census showed an increase of 330 million lbs from 1972 and shipments advanced 40.8 million lbs between 1967 and 1972.

Shipments of whole-wheat, cracked

Changes in poundage, value of baking's leading products

Product category	1987 shipments (million lbs)	Change from 1982 (%)	1987 value (million dollars)	Change from 1982 (%)
1. White bread	6,775	+ 6	$3,007	+ 15
2. Hamburger wiener rolls	3,125	+ 15	1,677	+ 27
3. Whole-wheat bread	2,271	+ 16	1,241	+ 29
4. White hearth bread	1,374	+ 50	700	+ 61
5. Snack cakes	1,369	+ 54	1,335	+ 57
6. Other variety bread	732	+ 61	458	+ 80
7. Other sweet yeast goods	602	+ 9	723	+ 24
8. Bagels	522	n.a.	268	n.a.
9. Rye bread	478	+ 25	291	+ 40
10. Other rolls	461	n.a.	299	n.a.
11. Bread stuffing, croutons, crumbs	401	+ 6	214	-10
12. English muffins	417	+ 3	267	+ 3
13. Cake donuts	359	-19	400	-14
14. Brown 'n serve	321	+ 15	218	+ 35
15. Hearth rolls	319	+ 17	168	+ 17
16. Snack pies	314	+ 12	321	+ 28





wheat, multi-grain and other dark wheat bread totaled 2,271 million lbs, up 16% from 1,956.1 million lbs in 1982 and compared with 1,270.2 million lbs in 1977. Shipments of rye bread, including pumpernickel, totaled 477.7 million lbs in 1987, up 25% from 383 million lbs in 1982 and compared with 387.3 million lbs in 1977.

Shipments of "other variety bread," including raisin, potato, salt-rising, salt-free and canned, were 731.8 million lbs in 1987, up 61% from 455 million lbs in 1982. In 1977, shipments of other variety bread were 412.7 million lbs.

The percentage increase in shipments of bread-type rolls in 1987 exceeded the gain in bread shipments.

Shipments of all rolls in 1987 amounted to 5,652.1 million lbs, up 26% from 4,472.7 million lbs in 1982 and compared with 3,879.6 million lbs in 1977. Within the roll category, all product types posted poundage shipment gains in 1987 from 1982 levels.

Percentage increases were led by hearth rolls and hamburger and wiener rolls; the latter continued as the largest product in the bread-type roll category.

Shipments of hearth rolls in 1987 totaled 319.3 million lbs, up 17% from 273.4 million lbs in 1982 and compared with 136.5 million lbs in 1977. Shipments of hamburger and wiener rolls in 1987 were 3,125.1 million lbs, up 15% from 2,718.5 million lbs in 1982 and compared with 2,658 million in 1977.

In other bread-type roll categories, shipments of brown and serve rolls in 1987 were 320.7 million lbs, up 15% from 279 million lbs in 1982 and compared with 263.5 million lbs in 1977. Shipments of English muffins in 1987 totaled 416.8 million lbs, up 3% from

Summary statistics for S.I.C. 2051

Item	Bread, cake, and related products (SIC 2051)			
	Total	Wholesale bakeries (SIC 2051-12)	Grocery store bakeries (SIC 2051-13)	Retail outlet bakeries (SIC 2051-16)
Companies ..... number	1 947	1 887	48	37
All establishments ..... do.	2 357	2 337	69	37
with 1 to 19 employees ..... do.	1 329	1 319	1	9
with 20 to 99 employees ..... do.	606	547	36	69
with 100 employees or more ..... do.	422	391	68	9
Employment and labor costs:				
Employees 1,000	161.8	144.2	14.9	2.5
Compensation, total ..... mil dol.	4 598.4	4 047.5	467.5	44.4
Annual payroll ..... do.	3 598.0	3 174.9	345.6	35.6
Fringe benefits ..... do.	1 003.4	872.6	122.0	8.8
Social Security and other legally required payments ..... do.	351.3	313.1	34.7	3.5
Employer payments and other programs ..... do.	652.1	559.5	87.3	5.3
Production workers:				
Average for year 1,000	86.6	74.0	11.0	1.6
March ..... do.	85.2	72.7	10.9	1.5
May ..... do.	86.2	73.8	10.9	1.5
August ..... do.	87.0	74.6	10.9	1.6
November ..... do.	87.9	74.4	11.1	1.6
Hours ..... millions	169.9	144.4	21.5	3.0
January to March ..... do.	41.3	35.2	5.4	.7
April to June ..... do.	42.3	36.1	5.4	.8
July to September ..... do.	42.9	36.6	5.6	.8
October to December ..... do.	42.4	36.4	5.5	.7
Wages ..... mil dol.	1 714.1	1 488.6	205.5	21.0
Value added by manufacture ..... do.	10 092.9	8 661.5	1 336.9	78.9
Cost of materials ..... do.	5 670.8	4 791.2	854.8	85.0
Materials, parts, containers, etc., consumed ..... do.	3 792.5	3 206.0	526.6	39.6
Resales ..... do.	1 610.6	1 316.8	278.8	14.9
Fuels ..... do.	194.9	167.6	15.9	1.3
Purchased electricity ..... do.	161.4	110.8	10.1	2.2
Contract work ..... do.	21.9	17.9	3.5	.2
Quantity of electric energy used for heat and power:				
Purchased ..... mil kwh	2 954.7	1 878.9	967.3	48.6
Generated here and sold ..... do.	8.2	8.2	-	-
Total value of shipments ..... mil dol.	16 888.1	13 988.6	2 359.5	132.1
Primary products ..... do.	16 338.3	13 924.9	2 274.5	98.9
Secondary products ..... do.	411.8	291.1	66.8	19.5
Miscellaneous receipts, total ..... do.	2 402.6	2 072.6	618.4	22.9
Value of resales ..... do.	2 388.1	2 057.8	476.8	20.1
Contract receipts ..... do.	5	3	1	.1
Other miscellaneous receipts ..... do.	119.8	113.8	1.6	(D)
Primary product specialization ratio ..... percent	97	(NA)	(NA)	(NA)
Coverage ratio ..... do.	89	(NA)	(NA)	(NA)

404 million lbs in 1982 and compared with 334.8 million lbs in 1977.

The 1987 Census report is the first to provide separate data for bagels and croissants.

Shipments of bagels in 1987 totaled 522.1 million lbs and shipments of croissants were 86.1 million lbs. Shipments of other bread-type rolls in 1987 aggregated 461.2 million lbs.

Shipments of bread stuffing, croutons and bread crumbs in 1987 were 400.8 million lbs, up 6% from 376.6 million lbs in 1982 and compared with 229.5 million lbs in 1977.

Shipments of total sweet goods — sweet yeast goods, cakes, pies and donuts — were 3,302.7 million lbs, up 18% from 2,809.2 million lbs in 1982 and compared with 2,606.6 million in 1977.

Shipments of soft cakes and sweet yeast goods, including yeast-raised donuts, sweet rolls and coffee cakes, were above 1982 levels, while shipments of cake-type donuts and pies were below levels of five years earlier.

Shipments of sweet yeast goods, including yeast-raised donuts and other types of sweet yeast goods such as sweet rolls and coffee cakes, totaled 879.9 million lbs in 1987, up 27% from 695.2 million lbs in 1982. The increase in shipments reversed a downward trend extending back to 1972.

The Census also showed an increase in shipments of yeast-raised donuts, at 277.5 million lbs, almost double shipments of 140.3 million lbs in 1982 and compared with shipments of 222.5 million lbs in 1977. Shipments in 1987 of all other types of sweet yeast goods, including sweet rolls and coffee cakes, were 602.4 million lbs, up 9% from 554.9 million lbs in 1982 and compared with 596 million in 1977.

The Census placed shipments of cake-type donuts at 359.3 million lbs, down 19% from 444.3 million lbs in 1982 and compared with 354.1 million lbs in 1977.

According to the Census, shipments of soft cakes, except frozen, were 1,657 million lbs, up 38% from 1,203.3 million in 1982.

Within the soft cake category, shipments of snack cakes totaled 1,368.8 million lbs, up 54% from 891.2 million lbs in 1982 and compared with 804.1 million lbs in 1977. Much of the increase in 1987 was attributed to the growing popularity of muffins.

Shipments of fruit cakes, holiday type, in 1987 aggregated 38.1 million lbs, up 130% from 16.6 million lbs in 1982 and compared with 24.7 million lbs in 1977.

Shipments of all other soft cakes, including pound, layer, sheet and cheesecake, in 1987 aggregated 250.1 million lbs, down 15% from 295.5 million lbs in 1982.

Shipments of all fresh pies, fruit and custard, in 1987 totaled 406.5 million lbs, down 13% from 466.4 million lbs in 1982.

The final Census report decreased shipments of pies in 1987 by 20.7 million lbs from the preliminary report's total of 427.2 million lbs, primarily due to a downward revision in preliminary data for shipments of snack pies.

According to the final Census report, shipments of snack pies totaled 314.2 million lbs, up 12% from 279.8 million lbs in 1982 and compared with 286.9 million lbs in 1977. Shipments for 1987 were decreased from the preliminary report's figure of 334.9 million lbs.

Shipments of all other pies in 1987 totaled 92.3 million lbs, down 51% from 186.6 million lbs in 1982 and compared with 182.1 million lbs in 1977.

Bread, cake and roll shipments in pounds, dollar value

[Includes quantity and value of products of this industry produced by: (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included.

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
2051– —	BREAD, CAKE, AND RELATED PRODUCTS						
	Total	(NA)	(D)	13 [illegible]	(NA)	(D)	11 [illegible]
20511 —	Bread: white, wheat, and rye (including frozen)	(NA)	(D)	6 [illegible]	(NA)	(D)	4 [illegible]
20511 11	White pan bread, mil lb baked wt	139	[illegible]	[illegible]	169	[illegible]	[illegible]
	Variety breads:						
20511 12	White specialty, including French, Italian, etc., mil lb baked wt	140	[illegible]	[illegible]	140	[illegible]	[illegible]
20511 13	Whole wheat, cracked wheat, multigrain, and other dark varieties, mil lb baked wt	[illegible]	[illegible]	[illegible]	150	[illegible]	[illegible]

20611 17	Rye, including pumpernickel	do...	39	477.7	501.2	110	**550.0	550.5
20611 39	Other variety breads (raisin, potato, salt-rising, salt-free, canned, etc.)	do...	78	791.0	467.7	91	**436.0	554.1
20611 00	Bread, white, wheat, and rye, n.s.k.		(NA)	(D)	98.0	(NA)	(D)	221.9
20612 —	Rolls, bread-type, including brown and serve; bread stuffing and bread crumbs		(NA)	(D)	3 211.9	(NA)	(D)	2 437.7
	Rolls, bread-type (including frozen):							
20612 21	Hamburger and wiener rolls	mil lb baked wt...	130	*3 126.1	1 677.2	152	*2 718.5	1 226.4
20612 25	Brown and serve rolls	do...	61	220.7	218.3	60	*279.0	181.6
20612 36	English muffins	do...	93	416.8	286.9	41	*404.0	256.1
20612 37	Hearth rolls	do...	76	**319.2	168.0	77	**273.4	143.8
20612 38	Bagels, all types	do...	89	822.1	288.4			
20612 40	Croissants	do...	32	86.1	74.4	115	**421.2	293.9
20612 42	Other bread-type rolls (kaiser, except hearth-type, clubhouse, etc.), excluding bagels	do...	97	481.2	288.7			
20612 46	Bread stuffing, croutons, and bread crumbs (plain and seasoned)	do...	42	*469.8	213.6	43	*378.6	237.5
20612 00	Rolls, bread-type, n.s.k.		(NA)	(D)	28.4	(NA)	(D)	77.4
20613 —	Sweet yeast goods, except frozen		(NA)	(D)	984.7	(NA)	(D)	786.7
20613 13	Yeast-raised doughnuts	mil lb baked wt...	67	*277.5	288.7	84	*160.2	168.4
20613 99	All other types of sweet yeast goods, including sweet rolls and coffeecakes	do...	99	662.4	732.7	121	*554.9	580.8
20613 00	Sweet yeast goods, n.s.k.		(NA)	(D)	13.3	(NA)	(D)	17.5
20614 —	Soft cakes, except frozen		(NA)	(D)	1 770.3	(NA)	(D)	1 231.2
20614 13	Snack cakes	mil lb baked wt...	47	1 388.6	1 394.9	49	681.2	682.4
20614 15	Fruit cakes, holiday type	do...	29	38.1	67.9	26	18.6	37.1
20614 19	All other soft cakes (except frozen), including pound, layer, sheet, cheese, etc.	do...	98	**280.1	357.8	114	**295.5	322.8
20614 00	Soft cakes, except frozen, n.s.k.		(NA)	(D)	8.8	(NA)	(D)	19.0
20615 —	Pies (fruit and custard), except frozen		(NA)	(D)	486.7	(NA)	(D)	394.5
20615 13	Snack pies	mil lb baked wt...	36	314.2	320.7	41	279.8	349.7
20615 19	All other	do...	80	98.3	114.2	58	106.8	144.2
20615 00	Pies (fruit and custard), except frozen, n.s.k.		(NA)	(D)	.8	(NA)	(D)	.8
20616 —	Pastries (excluding toaster pastries, pies, and yeast type):							
20616 00	Pastries (except frozen): all types of baking powder leavened only, including cream puffs, eclairs, French pastry, puff pastry, etc.		28	(D)	20.4	26	(D)	28.2
20617 —	Doughnuts (cake type):							
20617 09	Doughnuts, cake type (except frozen) (baking powder leavened)	mil lb baked wt...	57	389.5	399.7	79	444.8	466.9
20618 —	Bread, cake, and related products, n.s.k.		(NA)	(D)	965.8	(NA)	(D)	1 001.8
20618 09	Bread, cake, and related products, n.s.k., typically for establishments with 20 employees or more (see note)		(NA)	(D)	844.4	(NA)	(D)	799.0
20618 02	Bread, cake, and related products, n.s.k., typically for establishments with less than 20 employees (see note)		(NA)	(D)	880.8	(NA)	(D)	875.8

Note: In 1997 Census of Manufactures, data for establishments of small single unit companies with up to 20 employees were estimated from administrative-record data rather than data actively collected from respondents. Employment counts used for administrative records for each industry and statewide figures are included in code ending with "00". In both 1997 and 1992 Censuses of Manufactures, products and completely finished or standard items were coded to appropriate product class (7-digit) followed by "50" or to appropriate product group code (five-digit) followed by "999".

Data marked (NA) not available. (D) Withheld to avoid disclosure of data for individual companies.

Data marked with * are estimates based on carcass and retail weight and are based on quantity-value relationships of reported data. The SIC4/SIC5 symbols are used when coverage of each product class published in this section equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated; # 30 percent or more is estimated. Source: U.S. Census Bureau, 1997 Economic Census, Manufacturing, Subject Series, Product Lines.

Capital spending up 36% to $519 million

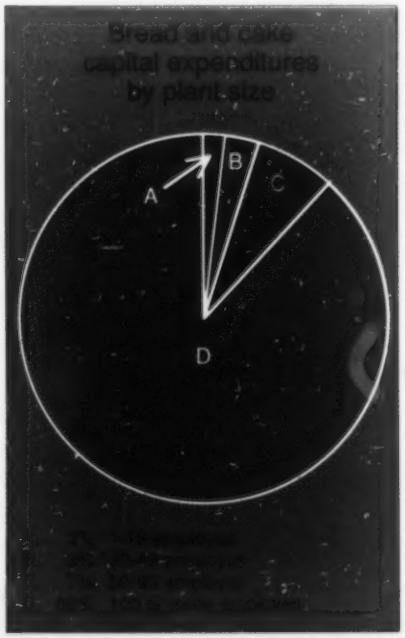
Expenditures on new plant and equipment by the 2,357 establishments classified in the Bread, Cake and Related Products Industry in 1987 totaled $519.3 million, up 36% from $382.4 million in 1982.

BAKING CENSUS REPORT

The overall increase of 36% in capital expenditures from 1982 was the same as the increase in capital expenditures in 1982 from 1977. (Dollar figures are at prices current at the year specified and are not adjusted for inflation.)

The 1987 capital spending of $519.3 million for new plant and equipment compared with the $280.4-million aggregate for new plant and equipment of $519.3 million and Annual Survey of Manufactures estimates for capital spending in the Bread, Cake and Related Products Industry provides an aggregate of $1,998.6 million in the five-year period ended in 1987. A comparable aggregate for the five-year period ended in 1982 was $1,553.5 million.

According to the Annual Survey of Manufactures, new capital expenditures by the Bread, Cake and Related Products Industry totaled $284.2 million in 1983, $408.4 million in 1984, $378 million in 1985 and $408.7 million in 1986.



Bread and cake capital expenditures, 1987 and 1982

	1987	1982 (millions of dollars)	% change
New plant, equipment	$519.3	$382.4	+36
New machinery, equipment	428.5	290.4	+48
Automobiles, trucks	91.3	n.a.	n.a.
Computers, data processing	11.8	n.a.	n.a.
All other	325.4	n.a.	n.a.
Buildings, structures	90.8	92.1	-1
Used plant, equipment	33.8	38.4	-12
Total spending	$553.1	$420.8	+31

N.A. - not available

New equipment spending up

The 1987 Census aggregate of $519.3 million included $428.5 million for new machinery and equipment and $90.8 million for buildings and other structures, compared with $290.4 million and $92.1 million, respectively, in 1982. Thus, companies in S.I.C. 2051 in 1987 spent 48% more than in 1982 on new machinery and equipment, and 1% less on buildings and other structures.

The new machinery and equipment total for 1987, according to the Census report, included $91.3 million for automobiles, trucks and other transportation equipment, $11.8 million for computers and data processing equipment and $325.4 million for all other machinery and equipment.

Companies in the Bread, Cake and Related Products industry also spent $33.8 million on used equipment in 1987, down from $38.4 million in 1982.

Larger-plant spending share up

Concentration of capital expenditures among the largest-sized plants in the Bread, Cake and Related Products Industry continued to increase in the 1987 Census.

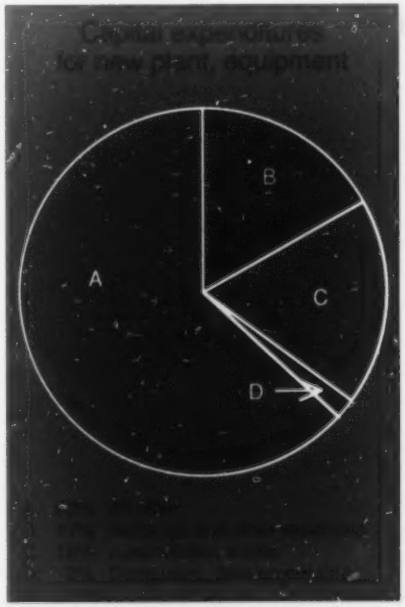
The 425 plants in the Bread, Cake and Related Products Industry with more than 100 employes accounted for new capital expenditures in 1987 of $457.5 million, or 88% of the industry's total. In the 1982 Census, the 501 plants in this size category accounted for outlays of $329.2 million, or 86% of the industry total. In the 1977 Census, the 556 plants in this size category accounted for capital expenditures of $211.3 million, or 75% of the industry's new expenditures.

The share of new capital expenditures by plants in the three other principal size categories declined or were unchanged. Plants with 50 to 99 employes accounted for 7% of total industry expenditures, down from 8% in 1982 and 13% in 1977. Plants with 20 to 49 employes accounted for 2% of new capital expenditures, unchanged from 1982 and down from 6% in 1977.

In detailing capital expenditures by plants according to their degree of specialization in products primary to the industry, the 1987 Census showed that

Capital expenditures for baking plants by primary product

Primary product	Number of plants	Capital expenditures	Per cent of total
Bread	430	$300.6	57.9%
Rolls	164	60.3	11.6%
Sweet goods	76	30.5	5.9%
Soft cakes	65	101.6	19.6%
Pies	31	4.0	0.8%
Pastries	8	0.5	0.1%
Cake donuts	5	0.7	0.1%

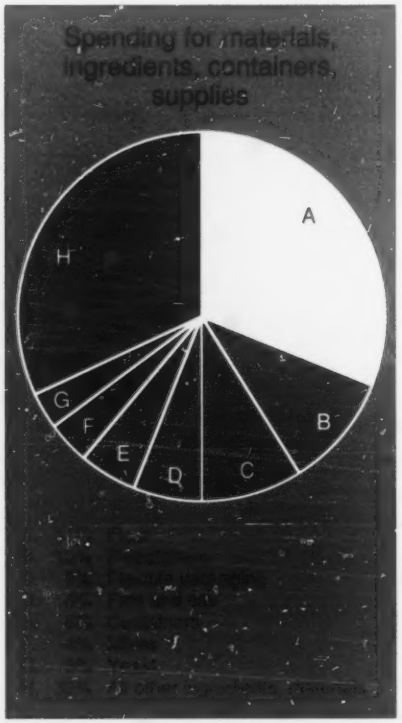


gregate in 1977, $170.6 million in 1972, $127.9 million in 1967, $95.3 million in 1963 and $104.1 million in 1958.

Combining the 1987 capital expenditures for mobiles and trucks, $11.8 million for computers and data processing and $325.4 million for all other. The 1987 Census was the first to provide this 1977. Plants with 20 to 49 employes accounted for 3% of new capital spending in 1987, down from 4% in 1982 and 6% in 1977. Plants with fewer than 20 the 430 plants with bread as a primary product accounted for capital outlays of $300 million, or 58% of the industry total.

Flour usage climbs to apparent record

Use of flour in the Bread, Cake and Related Products Industry in 1987 apparently reached a new peak. While that assessment at first glance would appear to coincide with the record poundage shipments by bread and cake plants in 1987, questions have surfaced because of a rather wide variation in the percentage increases in flour use and production from 1982.



According to the 1987 Census, plants in S.I.C. 2051 in 1987 used 141,508,000 cwts of flour, up 41% from 100,062,000 cwts in 1982. That percentage increase is considerably larger than the 18% increase in total 1987 poundage shipments of bread, bread-type rolls, cakes and sweet goods over 1982 levels.

Similar questions were raised on flour usage numbers in the 1982 Census, which showed that wheat flour usage was down 4% from 1977 levels but poundage shipments increased 3%.

A principal explanation for that 1982 variation was changing product mix — particularly the increased production of variety bread using more non-flour ingredients and/or higher water levels in formulas than in white bread. That theory obviously does not explain the variation in flour usage and production percentages in 1987, which was opposite, as well as considerably broader than, that noted in the 1982 Census.

If the 1987 flour usage total is accurate, it would be 35% larger than the previous record of 104,711,000 cwts in 1977.

Interestingly, the 1987 flour usage total in the final Census report was increased 32% from the 106,862,600 cwts shown in the preliminary report. Most of that 34,645,400-cwt revision was in white bread-type flour. The revisions, according to a Census Bureau official, reflected corrections as well as receipt of late data not compiled in the preliminary report. Even at the 106,862,600-cwt level indicated in the preliminary report, flour usage in 1987 exceeded the previous record in 1977.

Usage of major ingredients by bread and cake industry

	Wheat flour	Prepared mixes	Shortening	Sweeteners
		--(million lbs)--		
1987	14,150.8	516.6	837.7	1,969.7
1982	10,006.2	393.4	550.4	1,856.0
1977	10,471.1	430.1	590.7	1,679.9
1972	10,086.2	519.2	482.3	1,505.8
1967	10,213.0	642.6	397.4	1,386.1

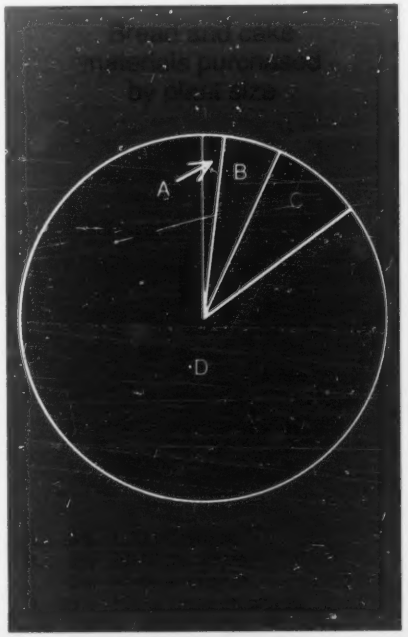
The 1987 flour total included 117,861,000 cwts of white bread-type flour, up 36% from 86,927,000 cwts in 1982. Plants in S.I.C. 2051 in 1987 used 5,016,000 cwts of cake-type flour, up 44% from 3,485,000 cwts in 1982. Usage of cookie and cracker-type flour in 1987 was 2,804,000 cwts, up a startling 460% from 501,000 cwts in 1982, the first year in which the category was broken out separately.

Usage of "other wheat flour, including whole-wheat, cracked wheat and clear flour but excluding prepared mixes," aggregated 13,545,000 cwts in 1987, up 68% from 8,044,000 cwts in 1982. The 1987 total for this category was increased 35% from the 10,021,000 cwts in the preliminary report.

Usage of wheat gluten in 1987 totaled 2,282,000 cwts, up 107% from 1,105,000 cwts in 1982, when it too was a new category.

Increase of 31% in mix usage

Use of prepared mixes by bread and



cake plants in 1987 totaled 5,166,000 cwts, up 31% from 3,934,000 cwts in 1982 and compared with 4,301,000 cwts in 1977. Mix usage in 1972 and 1967 totaled 5,192,000 cwts and 6,426,000 cwts, respectively.

Mix usage in 1987 included 1,963,000 cwts of cake and yeast-type donut mixes, down 18% from 2,401,000 cwts in 1982, and 1,168,000 cwts of bread-type mixes, including franchise mixes, up 84% from 635,000 cwts in 1982.

The Census showed that usage of cake-type mixes in 1987 totaled 497,000 cwts, up 352% from 110,000 cwts in 1982, when the category was listed for the first time. Use of "other prepared mixes, including sweet goods," totaled 1,538,000 cwts in 1987, up 95% from 788,000 cwts in 1982.

In contrast with the increase in the flour usage numbers from the preliminary report, the flour mix aggregate in the final report was 1,523,000 cwts smaller than shown in the preliminary data.

Total cost of $3.8 billion

According to the Census, the Bread, Cake and Related Products Industry in 1987 used ingredients, materials, containers and other supplies with a delivered cost of $3,782.2 million, up 1% from $3,729.8 million in 1982. The slight increase in value of ingredient and material usage noted in the 1987 Census contrasted with an advance of 32% in 1982.

Wheat flour, sweeteners and packaging materials continued to account for the top three ingredient and material costs for bread and cake plants, according to the 1987 Census. Wheat flour accounted for 31% of the total costs, while sweeteners used by the industry in 1987 accounted for 10% for the total. Flexible packaging materials and paperboard containers, boxes and corrugated paperboard accounted for 14%.

Averages $7.09 per cwt

Total cost of flour used in the Bread, Cake and Related Products Industry in 1987 was $1,168.4 million, down 1% from $1,177.4 million in 1982 and compared with $822.9 million in 1977. On a per cwt basis, the delivered flour costs were $7.09 in 1987, $11.31 in 1982 and $7.55 in 1977. The 31% share of total ingredient and material costs represented by flour in 1987 compared with 32% in 1982 and 29% in 1977.

Ranking second to flour as baking's largest purchasing cost in 1987 was the sweetener category. Total cost of sweeteners in 1987 was $368.6 million, or 10% of the total cost of all ingredients and materials. That compared with $331.6 million, or 9% of the aggregate, in 1982.

Use of sweeteners by the Bread, Cake and Related Products Industry continued to increase, according to the Census. It showed usage in 1987 of 2,185.2 million lbs, up 18% from 1,856 million lbs in 1982 and compared with 1,679.9 million lbs in 1977.

The 1987 sweetener total included 453.3 million tonnes, or 906.6 million lbs, of cane and beet sugar, up 15% from 395.8 million tonnes, or 791.6 million lbs, in 1982.

The switch by many bakers from cane and beet sugar to corn-based sweeteners continued to be reflected in the 1987 Census report. Use of corn syrup, high fructose corn syrup and other natural sweeteners in 1987 totaled 1,264.2 million lbs.

For the first time, the 1987 Census report separated "other natural sweeteners, including dextrose, honey, molasses and blends of corn sweeteners," from artificial sweeteners.

In 1987, usage of other natural sweeteners totaled 201.1 million lbs, while artificial sweetener usage was placed at 14.4 million lbs. The 1982 total for the two categories combined was 132.4 million lbs.

Total cost of flexible packaging materials and paperboard containers, boxes and corrugated paperboard in 1987 aggregated $546.7 million, or 14% of the total cost of all ingredients and materials. This same category in 1982 represented a cost of $478 million, or 13% of the aggregate.

Plants in S.I.C. 2051 in 1977 used 406.5 million lbs of 100% vegetable shortening, 175.8 million lbs of animal shortening and blends of animal and vegetable shortening, and 255.4 million lbs of lard.

While the final Census report omitted a separate usage figure for 100% vegetable shortening in 1982, that was apparently an oversight, as the final report in that Census year placed usage at 106.1 million lbs, or a little more than one-fourth of the 1987 total.

The 1982 final Census report placed usage of animal shortening and blends at 367.2 million lbs and of lard at 77.1 million lbs.

Bread and cake plants in 1987 also used 152.7 million lbs of other fats and oils (cooking oils, butter, margarine and puff paste), little changed from 155.6 million lbs in 1982.

Mixes represent 4% of total cost

Prepared flour mixes, with a total cost of $144.9 million, represented 4% of the total costs, compared with $122.9 million, or 3%, in 1982. In 1977, the Bread, Cake and Related Products Industry spent $101.5 million on mixes, which represented 4% of the total ingredient and material costs.

In the milk and milk replacers category, the industry in 1987 used 158.2 million lbs. Data in 1982 were withheld because estimates did not meet publication standards on the basis of either the response rate or a consistency review.

Usage of yeast by bread and cake plants in 1987 aggregated 329 million lbs. The 1987 total, which included 220.2 million lbs of compressed yeast and 108.8 million lbs of active dry yeast, was not strictly comparable to 1982, when data on active dry yeast were withheld because estimates did not meet publication standards.

The $3,782.2-million cost for materials, ingredients, containers and supplies used by the Bread, Cake and Related Products Industry in 1987 represented 67% of the total cost of materials and services used by bread and cake plants, which was $5,670.6 million. The latter total included, in addition to materials and ingredients, the cost of resales, fuel and electricity, and contract work.

Cost of materials and ingredients used as a percentage of the industry's total value of shipments declined in 1987.

Materials, ingredients consumed as per cent of value of shipments

	Materials consumed (millions)	Per cent of industry shipments
1987	$3,782.2	23%
1982	3,729.8	28%
1977	2,829.1	31%
1972	1,957.8	32%
1967	1,856.3	37%
1963	1,673.0	37%
1958	1,635.6	40%
1954	1,456.9	44%

Soft cakes, cake donuts buck frozen decline

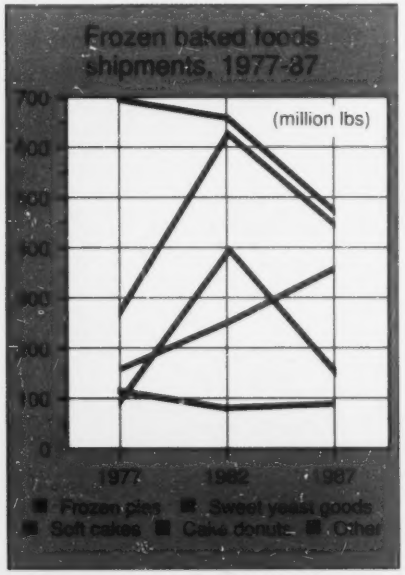
BAKING CENSUS REPORT

In its first separate report on Frozen Bakery Products, S.I.C. 2053, the Census of Manufactures for 1987 showed shipments of three of five principal frozen baked foods categories were down from 1982 levels. The exceptions were in frozen soft cakes and frozen cake donuts.

Newly established S.I.C. 2053 includes plants engaged in freezing and packing baked foods, including pies, sweet yeast goods, soft cakes and donuts.

In previous Census years, these products and establishments were classified as part of S.I.C. 2038, Frozen Specialties Industry.

Frozen bread and bread-type rolls data continue to be included in the Census of Manufactures report for S.I.C. 2051, the Bread, Cake and Related Products Industry.



The Census in its final report counted 103 companies and 114 plants in the Frozen Bakery Products Industry. Both counts were revised from the preliminary Census report, which showed only 57 companies and 111 plants.

Of the 114 plants in Frozen Bakery Products, 66, or 58%, had more than 20 employes. The industry total included 48 plants with fewer than 20 employes, 39 plants with 20 to 99 employes, and 27 plants with more than 100 employes.

Total value of shipments by plants in S.I.C. 2053 in 1987 aggregated $1,165.4 million.

The total included $1,071.2 million in products considered primary to the Frozen Bakery Products Industry, $84.9 million in secondary products, and $9.3 million in miscellaneous receipts. Thus, the specialization ratio — the ratio of primary products to the total of both secondary and primary products — of the Frozen Bakery Products Industry was 93%.

Account for 78% of shipments

Plants in S.I.C. 2053 accounted for 78% of product shipments considered primary to the industry. Total value of these shipments by all producers in 1987 was $1,372.7 million, up 6% from $1,292.5 million in 1982. That small increase reflected a decrease in poundage shipments.

According to the Census report, shipments of all frozen baked foods, except bread and bread-type rolls, by all producers aggregated 1,508.3 million lbs in 1987, down 25% from 1,999.4 million lbs in 1982.

Frozen pies (fruit, custard and cream type) continued as the leading frozen baked foods product in poundage and value in 1987, despite reductions from 1982.

Shipments of frozen pies totaled 478.9 million lbs in 1987, down 27% from 658.5 million lbs in 1982. Value of these shipments in 1987 was $449.4 million, up 15% from $391.2 million in 1982.

In marked contrast to the reduced shipments of frozen pies, shipments of frozen soft cakes (including pound, layer, sheet, fruit and cheese cake) in 1987 were up 42% from 1982.

Frozen soft cake shipments totaled 356.2 million lbs, according to the 1987 Census report, compared with the aggregated of 250.1 million lbs in 1982. Value of soft cake shipments in 1987 was $392 million, up 34% from $293 million in 1982.

The Census also showed an increase in 1987 shipments of frozen cake-type donuts. These shipments aggregated 83.9 million lbs, up 7% from 78.4 million in 1982. Value of frozen cake-type donut shipments in 1987 was $58.5 million, up 20% from $48.7 million in 1982.

Shipments of frozen sweet yeast goods (including yeast-raised donuts, sweet rolls and coffee cake) in 1987 totaled 152.6 million lbs, down 61% from 391.1 million in 1982. Value of these shipments in 1987 was placed at $157.6 million, down 25% from $209.2 million five years earlier.

In other frozen bakery products (including cookies and pastries), shipments in 1987 totaled 436.7 million lbs, down 30% from 621.3 million in 1982. Value of these shipments was $288 million in 1987 and $338.6 million in 1982.

Twenty-seven plants as leaders

The 27 plants with more than 100 employes in the Frozen Bakery Products Industry in 1987, while representing 24% of the total plant numbers, accounted for value of shipments of $958.1 million, or 82% of the industry total. These same 27 plants accounted for $495.1 million in value added by manufacture, or 83% of the industry total, which was $600 million.

The 103 companies in S.I.C. 2053 employed a total of 9,900 persons in 1987 with a total payroll of $195 million. That included 7,500 workers in production with total wages of $132.2 million.

Plants in S.I.C. 2053 in 1987 used materials, ingredients, containers and supplies with a delivered cost of $532.6 million.

The aggregate included 2,815,900 cwts of wheat flour with a delivered cost of $28.5 million and 108.6 million lbs of fats and oils with a delivered cost of $36.6 million.

Materials, ingredients consumed by Frozen Bakery Products Industry

	Quantity (million lbs)	Delivered cost (millions)
Natural cheese	...	$14.8
Frozen fruits	90.2	35.9
Cane, beet sugar	114.0	28.5
Fats and oils	108.6	36.6
Wheat flour	281.6	28.5
Flexible packaging	...	14.2
Containers, boxes	...	64.3
Aluminum packaging	...	23.1
Other	...	286.7

Milling & Baking News

Weekly Since 1922

Volume 69 Number 30 | September 25, 1990 | Sixty-Seven Dollars Per Year

ON THE INSIDE

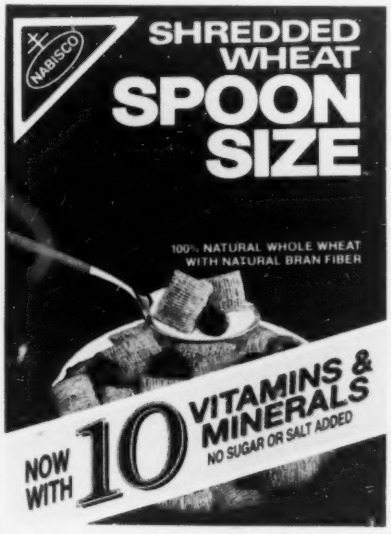
Flowers ready for growth 15
Chairman Amos R. McMullian sees fiscal 1991 as one of best years ever, citing strength in resources, operations, people.

Baked foods prices up 47
Consumer Price Index for Bakery Products increases in August by almost 1%; white bread, cookies, cupcakes lead upturn.

Ingredient week 9

In this week's issue:

MILLING CENSUS REPORT


NABISCO
SHREDDED WHEAT
SPOON SIZE
100% NATURAL WHOLE WHEAT WITH NATURAL BRAN FIBER
NOW WITH 10 VITAMINS & MINERALS
NO SUGAR OR SALT ADDED

Cereal manufacturers, including Nabisco Brands, Inc. with its Shredded Wheat Spoon Size Plus, are focusing promotional efforts on successful, longstanding product lines, according to "Product Perspective: Breakfast Cereals," beginning on Page 35.

Yeutter intends to set 15% wheat acreage reduction

WASHINGTON, Sept. 24. — With winter wheat farmers working overtime to sow the 1991 crop, Secretary of Agriculture Clayton Yeutter announced last week his intention to include a 15% acreage reduction program as part of the 1991 wheat program, clearing up weeks of uncertainty over a key element of the government's wheat program.

The decision was the result of an informal agreement between the Secretary and congressional leaders on a 15% land diversion program. Previously, Mr. Yeutter had said he intended to set the wheat A.R.P. at between 10% and 20%, indicating that he could not be more definitive without new farm legislation for the 1991 crop year.

On a separate track, Congress advanced the 1990 farm bill by selecting agriculture committee members of the conference panel that will forge the separate House- and Senate-passed bills into a single version. In still other action, a split over the future of federal crop insurance widened as a Senate committee voted to fund the program in fiscal year 1991.

Upon announcing tentatively the 15% A.R.P., Mr. Yeutter said, "I am pleased that the conferees acted so quickly on this important issue for winter wheat growers. This action proves that farm policy disagreements can be resolved smoothly and quickly when Congress and the administration work together for the benefit of agriculture."

Mr. Yeutter cited, as key to making the announcement, actions taken by Congress to

Continued on Page 21

LATE NEWS HIGHLIGHTS

Continental plans microwaveable bread

KANSAS CITY, Sept. 24. — Local sources said that Continental Baking Co., the nation's largest wholesale bread and cake baker, will introduce a microwaveable bread product in the Kansas City market within the next several weeks. A spokesperson for Continental Baking at its St. Louis headquarters would not confirm the introduction, citing the company's policy not to discuss new products before they are launched. It was uncertain whether the microwave product would be introduced only in the Kansas City market, in several test markets or on a national basis. Earlier this summer, General Mills, Inc., Minneapolis, and Gai's Seattle French Baking Co., Seattle, entered into a partnership venture in which Gai's began offering microwaveable bread under the Betty Crocker label (see *Milling & Baking News* of June 19, Page 9). A spokesman for General Mills said that the indicated product launch by Continental Baking was not connected with the General Mills project, which was designed for additional partnerships with other regional baking companies. The General Mills spokesman noted that the Minneapolis-based company plans to announce further developments in its microwaveable bread project in about a week.

Lin Zhongming returns to Ceroilfood as president

BEIJING, Sept. 24. — Lin Zhongming, who has a background in grain trading, has been named president of the China National Cereals, Oils and Foodstuffs Import & Export Corp., succeeding Chen Faxian, president of Ceroilfood (COFCO) for the past several years. Mr. Lin is well known to the international grain industry, having spent earlier years in his career with the corporation that has responsibility for a broad range of food-related activities in China, including import purchases and export sales of all grains and grain products. In recent years, Mr. Lin had been head of Everbrite, a Chinese trading entity in China. He previously was deputy manager of Ceroilfood and in that capacity served as co-chairman of the "grain markets analysis" section of the grain, milling and baking

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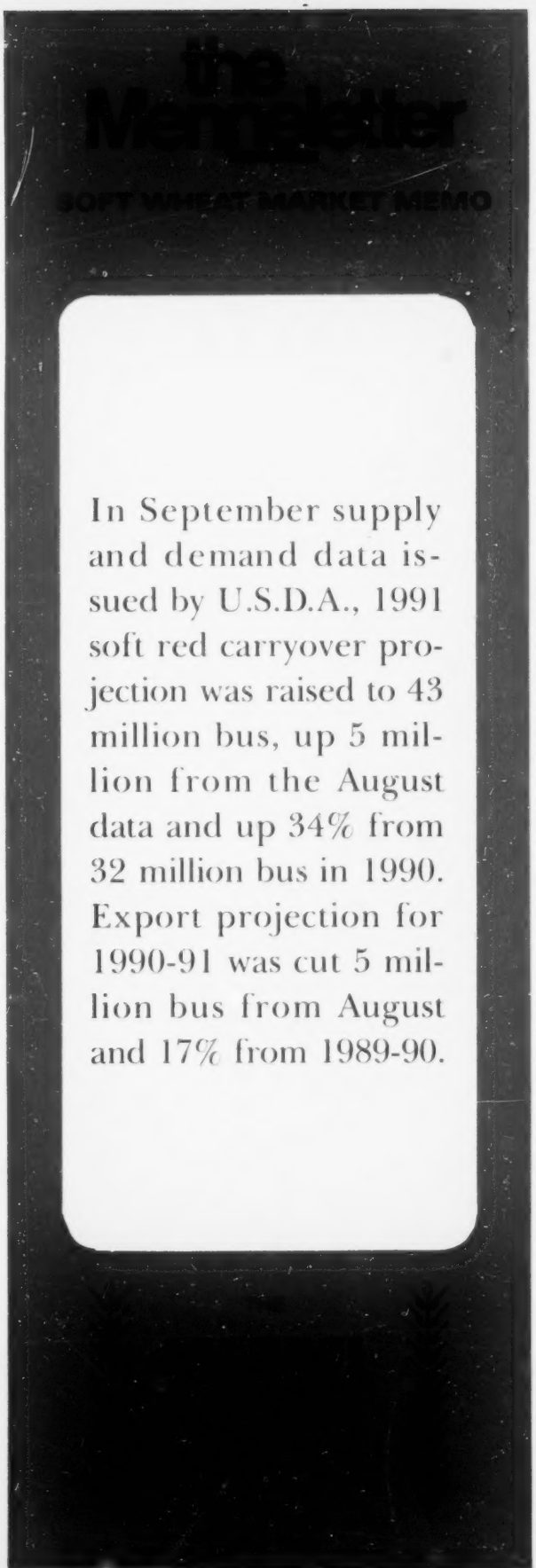
the
Marketer
SOFT WHEAT MARKET MEMO
In September supply and demand data issued by U.S.D.A., 1991 soft red carryover projection was raised to 43 million bus, up 5 million from the August data and up 34% from 32 million bus in 1990. Export projection for 1990-91 was cut 5 million bus from August and 17% from 1989-90.

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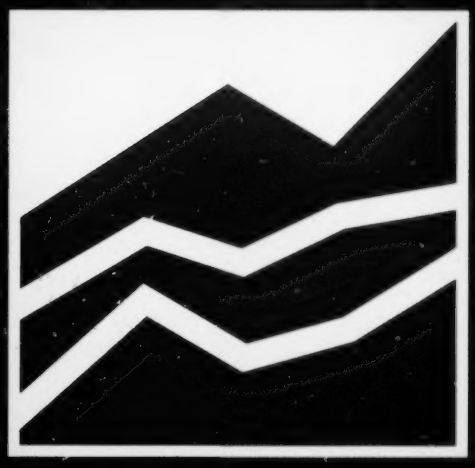

MILLING CENSUS REPORT

(FINAL)

Milling & Baking News

BUHLER

Buhler Inc.

P.O. Box 9497 • 1100 Xenium Lane • Minneapolis, MN 55440-9497 • Phone (612) 545-1401 • Fax (612) 540-9246

Dear Milling and Baking Executive,

Last year our company was proud to sponsor the preliminary analysis of the grain mill products and mix industry Census, and we are pleased to follow this with the sponsorship of this year's final report.

We commented last year on the many challenges that would face those in the milling, baking, grain and related industries during the decade of the 1990s, but few could have foreseen the dramatic events that have taken place in so many parts of the world during the past year.

These events could, however, present new and exciting opportunities for the milling and related industries in the United States and abroad, and we in the Buhler organization look forward to working with you in the coming years by offering the very best in technology and equipment.

In sponsoring this final report, we would like to thank all of our many customers for making us part of their success.

Sincerely yours,

Hans Wanzenried,
Group Vice President

Milling growth prevails; record volume

Continued growth in value of shipments and value added by manufacture, and a record in poundage product shipments, are detailed in the final 1987 Census of Manufactures report for the Flour and Other Grain Mill Products Industry, Standard Industrial Classification 2041. In addition, the Census report confirmed a marked slowing in the long-time decrease in plant and company numbers in flour milling.

MILLING CENSUS REPORT

The Flour and Other Grain Mill Products Industry, according to Department of Commerce definitions, is made up of "establishments primarily engaged in milling flour or meal from grain, except rice." Establishments primarily engaged in preparing mixes or doughs from purchased flour make up the newly defined Prepared Flour Mixes and Doughs Industry, S.I.C. 2045, previously known as the Blended and Prepared Flour Industry.

The Census counted 240 companies in S.I.C. 2041 in 1987, down from 251 in 1982. That 11-company decrease was considerably smaller than the 49-company drop in the 1977-82 period. Similarly, less shrinkage in mill numbers was noted in the 1987 Census. It counted 358 mills, off only two plants from 1982. The moderation in decreasing plant numbers largely reflected an increase of seven mills in the fewer-than-20-employe category in 1987. The 1982 Census showed a 47-plant decrease from 1977 in flour milling.

Larger milling plants, while decreasing in number in 1987, continued to account for a major share of the flour market. The 40 mills with 100 or more employes, for example, while representing only 11% of total mill numbers, accounted for 46% of the industry's value of shipments and 50% of the value added by manufacture.

According to the Census, the 358 mills in S.I.C. 2041 had 13,300 employes, of which 9,900 were production workers. In 1982, the 360 mills had total employment of 15,100, of which 11,400 were in production positions.

Other Census findings, as detailed in this special section, include the following:

- Wheat flour shipments aggregated a record 327.3 million cwts, up 14% from the previous peak of 287.6 million in 1982.
- Poundage shipments of the largest wheat flour product category — bakers' and institutional white bread-type flour — in 1987 was up 24% from 1982.
- While wheat and corn usage by mills in 1987 was up sharply from 1982 levels, total cost of materials, ingredients and containers and supplies was down, reflecting sharply lower grain costs.

Value of shipments by plants in the Flour and Other Grain Mill Products Industry in 1987 was up only 1% from 1982, but value added by manufacture increased 22%. That compared with gains of 34% and 33%, respectively, in 1982 from 1977.

Value added is considered by the Bureau of the Census to be the best value measure available for comparing relative economic importance of manufacturing among industries and geographic areas. According to the Bureau of the Census, value added is derived "by subtracting the cost of materials, supplies, containers, fuels, purchased electricity and contract work from the value of shipments. The result of this calculation is adjusted by the addition of value added by merchandising operations plus the net change in finished goods and work in process between the beginning and end-of-year inventories."

Value added by plants in the Flour and Other Grain Mill Products Industry in 1987 was $1,336.7 million, compared with $1,094.3 million in 1982. Value added numbers from earlier Census years are not fully comparable.

Total value of shipments for establishments classified in S.I.C. 2041 in 1987 totaled $4,984.8 million, up slightly from $4,932.8 million in 1982 and compared with $3,683.3 million in 1977. The value of shipments and value added by manufacture figures are in dollars current for the Census year specified and are not adjusted for inflation. During the 1982-87 period, the Producer Price Index for flour actually decreased 7.2 percentage points; the index for flour base mixes and doughs decreased 2.7 percentage points.

The Census report showed that 98% of the value of shipments by the Flour and Other Grain Mill Products Industry in 1987 was in products classified as primary to the industry. This specialization ratio was up slightly from 97% in 1982 and was the same as in 1977.

Of total shipments by establishments in the Flour and Other Grain Mill Products Industry, $4,556.4 million was in primary products, $80.5 million was in secondary products and $348 million was in miscellaneous receipts. Comparable totals in 1982 were $4,590.1 million, $124.8 million and $217.9 million, respectively.

"Coverage ratios" in the Flour and Other Grain Mill Products Industry in 1987 reversed a downward trend. The coverage ratio is the ratio of primary products shipped by establishments in the industry to the total shipments of such products by all manufacturers, wherever classified. This ratio in the Flour and Other Grain Mill Products Industry in 1987 was 97%, up from 94% in both 1982 and 1977.

The 1987 Census placed total wheat flour shipments by all establishments, regardless of industry classification, at 327,305,400 cwts, up 14%, or 39,703,400 cwts, from 287,602,000 cwts in 1982. The total in 1977 was 282,133,000 cwts.

While the preliminary Census report does not provide a total volume shipment figure for the Flour and Other Grain Mill Products Industry, aggregating the shipment data for individual product categories indicated that shipments in 1987 totaled 370,294,000

Milling Census at a glance . . .

Seven industries use majority of domestic wheat flour 5-A
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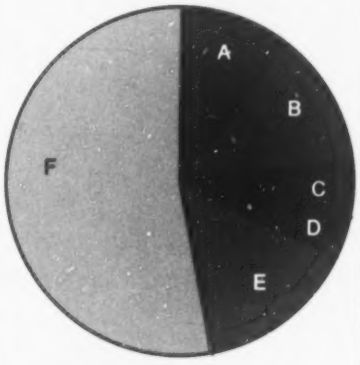
Minnesota regains lead in wheat flour shipments..... 10-A
Wheat, corn use up; costs decline 11-A

Advertising sponsor: Buhler Inc. 2-A, 6A-7A, 12-A

Wheat flour shipments by type, 1987



A.	10%	Other than white flour
B.	13%	Family flour
C.	5%	Exports
D.	4%	Shipped to blenders
E.	15%	Bakers' and institutional soft wheat flour
F.	53%	Bakers' and institutional white bread-type flour

Flour, Other Grain Mill Products shipments

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included.

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
2041- —	**FLOUR AND OTHER GRAIN MILL PRODUCTS**						
	Total	**(NA)**	**(X)**	**4 680.1**	**(NA)**	**(X)**	**4 871.2**
20411 —	Wheat flour, except flour mixes	(NA)	(X)	3 218.7	(NA)	(X)	3 102.3
	White flour:						
	Shipped for export:						
20411 05	Commercial dollar exports, all white flour types (1,000 sacks (cwt))	12	17 310.6	140.6	13	4 327.3	43.6
20411 07	All other exports of white flour, such as those under Public Law 480 (do.)	5	(S)	97.5	9	9 191.2	94.5
	Domestic shipments:						
	Bakers' and institutional white bread-type flour:						
20411 11	Shipped in bulk cars or trucks (1,000 sacks (cwt))	21	**149 500.8	1 326.2	22	120 204.9	1 231.3
20411 13	Shipped in containers, including tote bins (do.)	16	23 526.3	256.1	18	19 729.9	239.6
	Bakers' and institutional soft wheat flour, including commercial bakery, restaurant, hospital, etc.:						
20411 15	Shipped in bulk cars or trucks (1,000 sacks (cwt))	24	38 640.3	320.9	30	52 742.8	498.2
20411 17	Shipped in containers, including tote bins (do.)	20	8 692.7	89.8	19	5 171.0	56.6
	Family white flour:						
	All family flour other than self-rising, such as phosphated, plain, bromated, enriched, and all-purpose, including all-purpose purchased by the U.S. Government for domestic donation:						
20411 21	Shipped in containers less than 25 lb (1,000 sacks (cwt))	24	*29 059.2	358.5	24	20 360.8	311.7
20411 23	Shipped in containers 25 lb or more (do.)	16	*9 907.7	99.3	17	3 019.2	48.8
20411 26	Self-rising flour (do.)	15	3 664.1	66.2	(NA)	4 884.0	84.7
	Flour shipped to blenders or other processors (for further processing and/or packing before resale or shipment):						
20411 29	For use in food products (mixes, refrigerated doughs, soups, etc.) (1,000 sacks (cwt))	12	**9 795.5	81.6	18	17 618.6	163.2
20411 28	For use in nonfood products (pet food, industrial, etc.) (do.)	10	*3 062.3	16.6	10	3 549.5	25.7
	Other than white flour:						
20411 31	Whole wheat (1,000 sacks (cwt))	16	5 383.4	50.4	17	2 465.9	27.8
20411 51	Durum flour and semolina (do.)	10	26 727.8	258.3	9	17 676.5	192.9
20411 61	Bulgur (do.)	5	(S)	30.1	5	5 171.2	49.4
20411 98	Other wheat flour, including farina (do.)	10	2 022.7	21.4	11	1 489.2	18.0
20411 00	Wheat flour, except flour mixes (including white flour, whole wheat, durum, etc., made from wheat ground in this plant), n.s.k.	(NA)	(X)	5.2	(NA)	(X)	16.3
20412 —	**Wheat mill products other than flour**	**(NA)**	**(X)**	**336.9**	**(NA)**	**(X)**	**478.5**
20412 13	Wheat mill feed (1,000 s tons)	42	*5 353.7	298.3	64	5 061.9	456.9
20412 19	Other wheat mill products, including wheat germ, wheat bran, etc. (do.)	20	307.4	38.4	9	28.6	8.4
20412 00	Wheat mill products other than flour, n.s.k.	(NA)	(X)	.2	(NA)	(X)	13.2
20413 —	Corn mill products	(NA)	(X)	561.2	(NA)	(X)	553.8
	Corn products for human consumption:						
20413 11	Whole cornmeal (1,000 sacks (cwt))	14	(S)	36.8	22	3 191.2	51.2
20413 15	Degermed cornmeal (do.)	11	*11 856.6	165.3	12	7 648.3	111.8
20413 21	Corn grits and hominy, except for brewers' use (do.)	7	**8 310.1	54.5	10	6 746.3	87.8
20413 23	Corn grits and flakes for brewers' use (do.)	4	*3 147.9	18.5	8	5 537.4	55.0
20413 65	Hominy feed, cornmeal, and other byproducts of dry corn milling (for animal feed) (1,000 s tons)	18	*823.7	68.9	40	1 396.7	138.2
20413 93	Corn flour (1,000 sacks (cwt))	8	(S)	118.8	8	4 785.7	51.9
	Other corn mill products:						
20413 95	For human consumption (1,000 sacks (cwt))	8	8 272.0	89.9	11	2 858.6	44.5
20413 97	Not for human consumption (do.)	5	1 095.5	7.7	5	412.2	3.5
20413 00	Corn mill products, n.s.k.	(NA)	(X)	7	(NA)	(X)	10.0
20416 —	**Other grain mill products**	**(NA)**	**(X)**	**82.2**	**(NA)**	**(X)**	**165.6**
20416 11	Rye flour (1,000 sacks (cwt))	3	1 103.5	9.2	6	1 434.8	18.6
20416 23	Other flour (excluding wheat, corn, rye) (do.)	4	(D)	(D)	9	3 063.6	44.9
20416 27	Other mill feed (oats, rye, buckwheat, etc.) (1,000 s tons)	9	(D)	(D)	13	613.5	101.7
20416 00	Other grain mill products, n.s.k.	(NA)	(X)	1.4	(NA)	(X)	2.5
20410 —	Flour and other grain mill products, n.s.k.	(NA)	(X)	150.5	(NA)	(X)	188.9
20410 00	Flour and other grain mill products, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	13.5	(NA)	(X)	141.4
20410 02	Flour and other grain mill products, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	137.0	(NA)	(X)	47.5

Note: In 1987 Census of Manufactures, data for establishments of small single unit companies with up to 20 employees were estimated from administrative-records data rather than data actually collected from respondents. Employment cutoffs used for administrative-records for each industry and shipments figures are included in code ending with "002". In both 1987 and 1982 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

[1]Data reported by all producers, not just those with shipments of $100,000 or more.
[2]For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

cwts, up 10% from 337,931,500 cwts in 1982.

Total value of these shipments in 1987 was $4,690.1 million, down 4% from $4,871.2 million in 1982.

In detailing shipments of all wheat flour, the Census report broke out shipments of white, whole-wheat, durum, bulgur and other wheat flour. Shipments of white flour, including export and domestic use, were 293,171,500 cwts in 1987, up 12% from 260,799,200 cwts in 1982 and compared with 250,810,000 in 1977. Value of these shipments in 1987 was $2,853.3 million, up 2% from $2,797.9 million in 1982.

Larger domestic white flour use

White flour shipments in 1987 included 275,860,900 cwts for domestic use, up 12% from 247,280,700 cwts in 1982, and at least 17,310,600 cwts of flour shipped for export, up 28% from 13,518,500 cwts in 1982. Some export data were withheld in 1987 because the estimate did not meet publication standards on the basis of either the response rate or a consistency review.

Domestic white flour shipments in 1987 included 173,029,100 cwts of bakers' and institutional white bread-type flour, 47,333,000 cwts of bakers' and institutional soft wheat flour, 42,641,000 cwts of white family flour and 12,857,800 cwts of flour shipped to blenders or processors.

The 173,029,100 cwts of bakers' and institutional white bread-type flour — the largest wheat flour product category — represented an increase of 24% from 139,934,800 cwts in 1982. That increase contrasted with the previous five-year period when 1982 shipments were down 4% from 145,781,700 cwts in 1977.

Of the total shipments of bakers' and institutional white bread-type flour in 1987, bulk shipments aggregated 149,500,800 cwts, up 24% from 120,204,900 cwts in 1982, while shipments in containers, including tote bins, totaled 23,528,300 cwts, up 19% from 19,729,900 cwts in 1982.

In contrast with the 24% increase in shipments of bakers' and institutional white bread-type flour, shipments of bakers' and institutional soft wheat flour in 1987 were down 18%, totaling 47,333,000 cwts, compared with 57,913,800 cwts in 1982.

Accounting for the decrease in all shipments of bakers' and institutional soft wheat flour in 1987 was a 27% decline in bulk shipments, which totaled 38,640,300 cwts, against 52,742,800 cwts in 1982. That decline was partially offset by a 68% increase in shipments of bakers' and institutional soft wheat flour in containers — 8,692,700 cwts in 1987, against 5,171,000 in 1982.

In 1987, white flour represented 79% of total shipments of bakers' and institutional flour (220,362,100 cwts) while soft wheat flour accounted for 21% of the total. In 1982, the respective shares were 71% and 29%. In the 1977 Census, white flour represented 77% of the total with soft wheat flour accounting for the remaining 23%.

Shipments of family flour in 1987, according to the Census report, totaled 42,641,000 cwts, up 51% from 28,264,000 cwts in 1982 and compared with 26,133,000 cwts in 1977. Accuracy of the 1987 numbers was questioned by many observers in light of the downward trend in family flour usage throughout the 1980s. That pattern, according to major flour milling companies, ended last year with an upturn in family flour consumption.

The Census totals included all-purpose flour purchased by the federal government for domestic donation.

Shipments of family flour in containers of less than 25 lbs totaled 29,069,200 cwts in 1987, up 43% from 20,360,800 cwts in 1982. Shipments of family flour in containers of 25 lbs or more were 9,907,700 cwts, up 228% from 3,019,200 cwts in 1982.

The Census report placed shipments of self-rising flour in 1987 at 3,664,100 cwts, down 25% from 4,884,000 cwts in 1982 and well below 6,386,400 cwts in 1977.

Shipments of white flour to blenders or other food processors for use in food products in 1987 totaled 9,795,500 cwts, down 44% from 17,618,600 cwts in 1982. These usages include mixes, refrigerated doughs and soups. Shipments of white flour for use in nonfood products in 1987 totaled 3,062,300 cwts, down 14% from 3,549,500 cwts in 1982.

Value of shipments of domestic white flour in 1987, according the Census, aggregated $2,615.2 million, down 2% from $2,659.8 million in 1982. The total for 1987 included $1,582.3 million in bakers' and institutional white bread-type flour, up 8% from $1,470.9 million in 1982; $410.7 million in bakers' and institutional soft wheat flour, down 26% from $554.8 million; $524 million in family flour, up 18% from $445.2 million; and $98.2 million in flour shipped to blenders or processors, down 48% from $188.9 million.

According to the Census report, 1987 shipments of other flour products, including whole-wheat flour, durum flour and semolina, bulgur flour and other wheat flour, such as farina, were up from 1982 levels.

Shipments of wheat flour, other than white, in 1987 totaled 34,133,900 cwts, up 27% from 26,802,800 cwts in 1982. The 1987 total is inexact because data for one category — bulgur flour — were withheld as the estimates did not meet publication standards. Value of shipments for the overall category in 1987 was $360.2 million, up 25% from $288.1 million in 1982.

Whole-wheat flour shipments up

Whole-wheat flour shipments in 1987 were placed at 5,383,400 cwts, up 118% from 2,465,900 cwts in 1982. Shipments of durum flour and semolina in 1987 totaled 26,727,800 cwts, up 51% from 17,676,500 cwts in 1982, and shipments of other wheat flour aggregated 2,022,700 cwts, up 36% from 1,489,200 cwts in 1982.

Value of shipments of whole-wheat flour in 1987 was $50.4 million, up 81% from $27.8 million in 1982; value of durum flour and semolina shipments in 1987 was $258.3 million, up 34% from $192.9 million in 1982. Value of other wheat flour shipments in 1987 totaled $21.4 million, up 19% from $18 million in 1982.

Shipments of corn mill products for human consumption in 1987, according to the Census report, totaled 23,314,600 cwts, down 3% from 24,123,200 cwts in 1982. These product shipments include whole corn meal, degermed corn meal, corn grits, flakes and hominy. Value of these shipments in 1987 was $275.1 million, down 10% from $305.8 million in 1982.

Shipments of rye flour, as an "other grain mill product," totaled 1,103,500 cwts in 1987, down 23% from 1,434,800 cwts in 1982; value of shipments was $9.2 million, down 45% from $16.6 million in 1982.

Seven industries use majority of domestic wheat flour in 1987

Establishments in seven industries used 82% of the total domestic wheat flour shipped in 1987 by the Flour and Other Grain Mill Products Industry for consumer food use.

The shipment aggregate, of 235,541,000 cwts, includes bakers' and institutional white and soft wheat flour, flour shipped to blenders or other food processors for consumer food use, and whole-wheat flour. It excludes family flour, durum flour and semolina, bulgur and other wheat flour, including farina.

According to the Census of Manufactures reports for industries making up S.I.C. 20, Food and Kindred Products, usage of wheat flour for consumer food products totaled at least 193,891,100 cwts. The remaining 41,650,000 cwts was used for nonfood purposes, such as in pet and animal feed, or in industries in which flour consumption data were not disclosed.

Wheat flour consumption by food industries and per cent of all flour shipments

Industry S.I.C. Number	Cwts used	%
Canned Specialties 2032	2,009,100	1
Frozen Specialties 2038	11,118,900	5
Cereal Breakfast Foods 2043	3,599,700	2
Bread and Cake 2051	139,226,000	59
Cookie and Cracker 2052	28,528,000	12
Frozen Bakery Products 2053	2,815,900	1
Food Preparations, N.E.C. 2099	6,593,500	3
Total	193,891,100	82*

*Industry percentages do not add to 82 because of rounding.

Mix, Dough and Batter shipments

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) also are included.

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
	Flour mixes, and refrigerated and frozen doughs, and batters	(NA)	(X)	3 162.1	(NA)	(X)	2 073.9
	Flour mixes:						
	Pancake and waffle mixes:						
	Shipped in containers of less than 5 lb (cwt)	(NA)	2 645.7	111.4	(NA)	3 380.4	152.3
20415 51	Made chiefly from flour milled in same establishment	10	1 653.8	56.3	8	726.1	37.9
20450 51	Made chiefly from purchased flour	4	991.9	55.1	10	2 654.3	114.4
	Shipped in containers of 5 lb or more	(NA)	2 387.4	88.3	(NA)	967.9	23.1
20415 52	Made chiefly from flour milled in same establishment	2	(D)	(D)	4	155.3	5.8
20450 52	Made chiefly from purchased flour	7	(D)	(D)	10	812.6	17.3
	Cake mixes, including gingerbread:						
	Shipped in containers of less than 5 lb (cwt)	(NA)	3 831.5	294.5	(NA)	7 562.8	549.3
20415 53	Made chiefly from flour milled in same establishment	6	(D)	(D)	5	1 381.9	97.8
20450 53	Made chiefly from purchased flour	8	(D)	(D)	12	618.1	451.5
	Shipped in containers of 5 lb or more	(NA)	4 861.1	371.2	(NA)	1 147.8	54.8
20415 54	Made chiefly from flour milled in same establishment	4	(D)	(D)	3	329.4	12.4
20450 54	Made chiefly from purchased flour	18	(D)	(D)	18	818.4	42.4
	Biscuit mixes:						
	Shipped in containers of less than 5 lb (cwt)	(NA)	1 443.6	61.5	(NA)	1 045.2	27.5
20415 56	Made chiefly from flour milled in same establishment	10	(D)	(D)	7	525.7	20.0
20450 56	Made chiefly from purchased flour	3	(D)	(D)	4	519.5	7.5
	Shipped in containers of 5 lb or more	(NA)	378.1	17.8	(NA)	733.9	27.5
20415 57	Made chiefly from flour milled in same establishment	3	(D)	(D)	6	212.5	8.5
20450 57	Made chiefly from purchased flour	6	(D)	(D)	11	521.4	19.0
	Pie crust mixes	(NA)	231.4	16.2	(NA)	(D)	(D)
20415 60	Made chiefly from flour milled in same establishment	1	(D)	(D)	2	(D)	(D)
20450 60	Made chiefly from purchased flour	6	(D)	(D)	9	(D)	(D)
	Doughnuts and other sweet yeast goods mixes	(NA)	7 102.0	202.8	(NA)	4 717.0	150.6
20415 63	Made chiefly from flour milled in same establishment	3	(D)	(D)	3	(D)	(D)
20450 63	Made chiefly from purchased flour	14	(D)	(D)	17	(D)	(D)
	Bread and bread-type roll mixes:						
	Shipped in containers of less than 5 lb (cwt)	(NA)	826.5	28.2	(NA)	3 092.6	58.5
20415 66	Made chiefly from flour milled in same establishment	3	(D)	(D)	2	(D)	(D)
20450 66	Made chiefly from purchased flour	3	(D)	(D)	5	(D)	(D)
	Shipped in containers of 5 lb or more	(NA)	2 490.7	121.0	(NA)	2 942.9	56.4
20415 67	Made chiefly from flour milled in same establishment	4	534.1	18.3	5	693.3	17.0
20450 67	Made chiefly from purchased flour	13	1 958.6	102.7	15	1 749.6	41.4
	Other prepared flour mixes, including cookie mixes:						
	Shipped in containers of less than 5 lb (cwt)	(NA)	4 853.8	328.0	(NA)	5 325.1	318.0
20415 72	Made chiefly from flour milled in same establishment	5	(D)	(D)	8	1 660.8	75.6
20450 72	Made chiefly from purchased flour	8	(D)	(D)	12	3 664.3	242.4
	Shipped in containers of 5 lb or more	(NA)	4 566.0	172.7	(NA)	4 304.1	109.1
20415 74	Made chiefly from flour milled in same establishment	4	580.3	11.3	10	865.7	20.2
20450 74	Made chiefly from purchased flour	13	3 985.7	161.4	13	3 438.4	88.9
	Refrigerated doughs and batters:						
	Biscuit dough	(NA)	(D)	(D)	(NA)	(D)	(D)
20415 81	Made chiefly from flour milled in same establishment	-	-	-	-	-	-
20450 81	Made chiefly from purchased flour	4	(D)	(D)	4	(D)	(D)
	Bread and bread-type roll dough, including dinner	(NA)	(D)	(D)	(NA)	(D)	(D)
20415 85	Made chiefly from flour milled in same establishment	-	-	-	-	-	-
20450 85	Made chiefly from purchased flour	2	(D)	(D)	5	(D)	(D)
	Other doughs and batters	(NA)	391.2	281.0	(NA)	129.0	75.8
20415 87	Made chiefly from flour milled in same establishment	3	(D)	(D)	2	(D)	(D)
20450 87	Made chiefly from purchased flour	12	(D)	(D)	15	(D)	(D)
	Frozen doughs and batters:						
	Bread and bread-type roll dough	(NA)	852.6	332.7	(NA)	-	-
20415 91	Made chiefly from flour milled in same establishment	1	(D)	(D)	(X)	(X)	(X)
20450 91	Made chiefly from purchased flour	26	(D)	(D)	(X)	(X)	(X)
	Other doughs and batters	(NA)	529.0	253.5	(NA)	(X)	(X)
20415 93	Made chiefly from flour milled in same establishment	-	-	-	(X)	(X)	(X)
20450 93	Made chiefly from purchased flour	30	529.0	253.5	(X)	(X)	(X)
	Flour mixes, and refrigerated doughs and batters, n.s.k.	(NA)	(X)	24.5	(NA)	(X)	95.3
20415 00	Made chiefly from flour milled in same establishment	-	(X)	-	(NA)	(X)	(D)
20450 00	Made chiefly from purchased flour	(NA)	(X)	24.5	(NA)	(X)	(D)

[1]Data reported by all producers, not just those with shipments of $100,000 or more.

[2]For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

First data on frozen doughs, batters

The Census of Manufactures for 1987 is the first to provide data on the increasingly important frozen dough and frozen batter product categories. At the same time, changes in industry definitions and the addition of new product categories resulted in a less complete data package than in previous Census years for the traditional flour mix and refrigerated dough and batter products.

MILLING CENSUS REPORT

Under a Department of Commerce revision of Standard Industrial Classification codes, S.I.C. 2045, previously the Blended and Prepared Flour Industry, now is designated as Prepared Flour Mixes and Doughs. This industry comprises establishments, other than flour mills, producing flour mixes and refrigerated and frozen doughs and batters. Data related to those mixes and doughs that are produced in flour mills are included under S.I.C. 2041, Flour and Other Grain Mill Products.

Despite withholding detailed data within specific industries for prepared mixes and doughs to avoid disclosing figures for individual companies, the Census did supply information on selected products primary to more than one industry, including S.I.C. 2041 and S.I.C. 2045 (see facing page).

Value of shipments gains 67%

According to the Census report for S.I.C. 2045, value of shipments of flour mixes and refrigerated and frozen doughs and batters by all plants other than flour mills — including those classified in S.I.C. 2045 and those classified in other industries — totaled $2,821.6 million, up 67% from $1,691.8 million in 1982.

Value of shipments of flour mixes and refrigerated and frozen doughs and batters in the Flour and Other Grain Mill Products Industry in 1987 was placed at $340.5 million. Value of shipment data for several product categories were withheld to avoid disclosing information for individual companies. Value of all shipments in 1982 was $382.4 million.

Value of shipments of flour mixes and refrigerated and frozen dough and batter products that were considered primary to more than one industry totaled $3,162.1 million in 1987, up 52% from $2,073.9 million in 1982. While the Census report did not provide a total volume shipment figure for these products, aggregating the available shipment data for individual product categories indicated that total shipments in 1987 were at least 35,617,800 cwts for flour mixes, 391.2 million lbs for refrigerated doughs and mixes and 1,381.6 million lbs for frozen doughs and mixes.

Within the flour mixes category, the Census report showed that "other prepared flour mixes, including cookie mixes" that were considered primary products to more than one industry paced poundage shipments in 1987. This category was followed by cake mixes; donut and other sweet yeast goods mixes; pancake and waffle mixes; bread and bread-type roll mixes; biscuit mixes, and pie crust mixes.

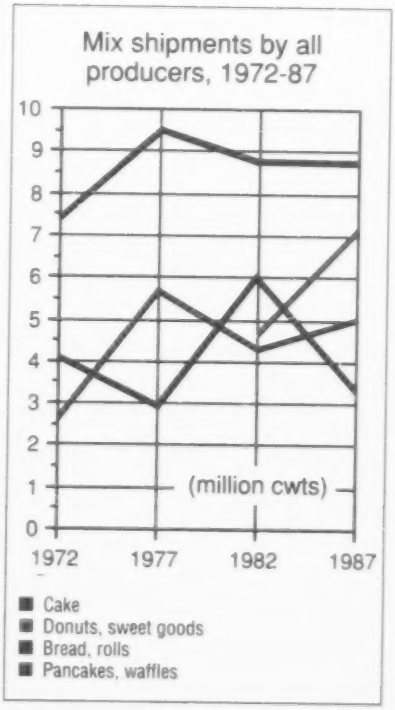
Shipments of "other prepared flour mixes" considered primary to more than one industry in 1987 totaled 9,419,800 cwts, down 2% from 9,629,200 cwts in 1982. Value of these shipments in 1987 was $500.7 million, up 17% from $427.1 million in 1982.

The Census report placed shipments of cake mixes considered as a primary product for more than one industry at 8,692,600 cwts, down 0.2% from 8,710,600 cwts in 1982. Value of these shipments was $665.7 million in 1987, up 10% from $604.1 million in 1982.

Donut, sweet goods mixes up

Shipments of donut and other sweet yeast goods mixes, as primary products to more than one industry, totaled 7,102,000 cwts in 1987, up 51% from 4,717,000 cwts in 1982. Value of these shipments in 1987 was $202.8 million, up 35% from $150.6 million in 1982.

Pancake and waffle mix shipments in 1987 aggregated 5,033,100 cwts, up 16% from 4,348,300 cwts in 1982. Value of shipments for pancake and waffle mixes in 1987 was $199.7 million, up 14% from $175.4 million.



According to the Census report, shipments of bread and bread-type roll mixes in 1987 totaled 3,317,200 cwts, down 45% from 6,035,500 cwts in 1982. Value of these shipments in 1987 was $149.2 million, up 28% from $116.9 million in 1982.

Biscuit mix shipments in 1987 were 1,821,700 cwts, up 2% from 1,779,100 cwts in 1982. The Census placed value of these shipments in 1987 at $79.3 million, up 44% from $55 million in 1982.

Shipments of pie crust mixes in 1987 totaled 231,400 cwts and value of shipments for this category was $16.2 million. Shipment and value of shipment data were withheld in 1982 to avoid disclosing information for individual companies.

In the refrigerated doughs and batters category, the 1987 Census report provided data only on shipments of "other doughs and batters" that were considered primary products for more than one industry. These shipments in 1987 totaled 391.2 million lbs, up 203% from 129 million lbs in 1982. Value of these shipments in 1987 was $281 million, up 271% from $75.8 million in 1982.

Regarding frozen doughs and batters considered as primary products for more than one industry, the Census in 1987 placed shipments of frozen bread and bread-type roll dough at 852.6 million lbs and value of shipments at $332.7 million. Shipments of "other frozen doughs and batters" in 1987 totaled 529 million lbs with value of shipments at $253.5 million. Data for these two categories are not comparable with 1982 because of the new Census classification for frozen doughs and batters.

Data available for 6 states

The six states for which the Census report provided data on value of shipments accounted for 39% of the $2,625.1 million total value of shipments for the Prepared Flour Mixes and Doughs Industry in 1987.

According to the Census report, Illinois led in value of shipments for S.I.C. 2045 in 1987 with an aggregate of $497.2 million, or 19% of the total. The remaining five states for which data were provided accounted for single-digit shares of the total. Value of shipments by Texas was placed at $190.3 million in 1987, or 7% of the total; Washington's value of shipments aggregated $119.4 million, or 5% of the total.

Accounting for 4% of the total value of shipments in the Prepared Flour Mixes and Doughs Industry in 1987 were both Ohio and Wisconsin, aggregating $104.8 million and $95.7 million, respectively. Oregon's value of shipments in 1987 was $25.3 million, or 1% of the total.

Historical statistics for S.I.C. 2041, 2045

(Data on value added, cost of materials and value of shipments are for all products, including those classified as secondary.)

Year	Companies (no.)	All establishments: Total (no.)	All establishments: With 20 employees or more (no.)	All employees: Number (1,000)	All employees: Payroll (million dollars)	Production workers: Number (1,000)	Production workers: Hours (millions)	Production workers: Wages (million dollars)	Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories (million dollars)	Ratios: Specialization (percent)	Ratios: Coverage (percent)
INDUSTRY 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS															
1987 Census	240	358	185	13.3	354.6	9.9	21.4	246.0	1 336.7	3 657.0	4 984.8	79.5	346.8	98	97
1986 ASM	(NA)	(NA)	(NA)	13.5	348.7	9.9	21.4	241.3	1 345.9	3 642.5	5 003.1	62.8	318.9	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	13.3	331.5	9.6	21.0	230.1	1 159.4	4 039.0	5 204.8	82.7	407.0	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	13.9	335.5	10.3	22.3	234.4	1 208.0	4 108.5	5 305.7	68.7	396.2	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	14.7	335.4	10.9	24.2	237.3	1 198.4	4 012.1	5 228.6	64.8	354.9	(NA)	(NA)
1982 Census	251	360	174	15.1	323.0	11.4	24.2	233.3	1 094.3	3 825.5	4 932.8	90.6	361.6	97	94
1981 ASM	(NA)	(NA)	(NA)	15.8	305.7	11.6	26.1	214.6	1 113.7	4 189.1	5 313.8	67.3	382.3	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	15.5	273.9	11.3	25.6	195.7	1 030.4	3 819.8	4 835.4	53.3	439.6	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	15.3	255.5	11.2	25.2	181.3	942.5	3 281.2	4 218.3	68.4	402.0	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	15.1	241.8	11.1	24.4	168.5	845.3	2 934.3	3 780.9	56.9	303.8	(NA)	(NA)
1977 Census	300	407	173	15.6	222.3	11.3	24.6	153.4	824.5	2 854.2	3 683.3	52.4	263.2	96	94
1976 ASM	(NA)	(NA)	(NA)	17.5	217.1	12.5	26.9	149.0	746.1	3 343.9	4 095.9	53.6	303.3	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	17.7	204.0	12.9	27.7	139.3	714.9	3 589.5	4 327.6	45.8	328.2	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	17.4	185.3	13.0	28.1	128.7	809.1	3 902.1	4 502.2	44.0	381.1	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	17.0	167.9	12.7	28.4	118.5	589.1	2 785.7	3 328.3	29.8	375.7	(NA)	(NA)
1972 Census	340	457	181	16.1	152.8	11.9	26.9	106.1	509.8	1 885.2	2 380.0	30.0	211.3	97	95
INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS															
1987 Census	118	149	97	12.1	275.9	8.2	16.5	156.8	1 278.8	1 339.6	2 625.1	66.1	152.6	89	78

Minnesota regains lead in wheat flour shipments

Minnesota in 1987 regained from New York the top ranking among states in terms of value of shipments of the leading category, "wheat flour products, except mixes," according to the Census of Manufactures for the Flour and Other Grain Mill Products Industry.

MILLING CENSUS REPORT

Minnesota, which ranked second in 1982 and first in 1977, jumped into first place in 1987 with value of shipments of wheat flour products, except mixes, reaching $324.5 million, virtually unchanged from $324.3 million in 1982. It ranked third in shipments of "wheat mill products other than flour," including millfeed, wheat germ and wheat mill products other than flour, not specified by kind. Value of shipments in this category was $26.6 million, down from $46.7 million in 1982. Minnesota in 1987 had 21 plants in S.I.C. 2041, two fewer than in 1982.

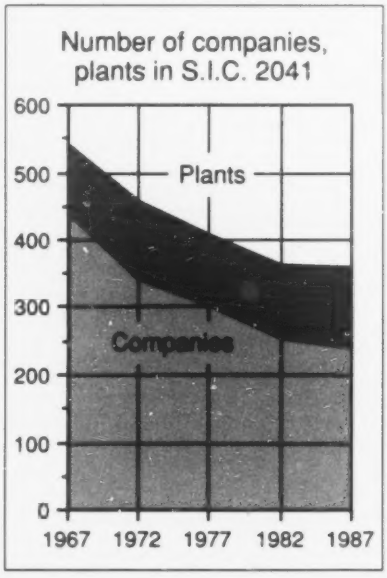
New York in 1987 ranked second in the value of shipments of both wheat flour products, except mixes ($313 million, down 4% from 1982) and of wheat mill products other than flour ($29.8 million, down 28% from 1982.) New York in 1987 continued to counter the long-term industry trend in plant numbers. It had 18 plants in the Flour and Other Grain Mill Products Industry, compared with 17 in 1982 and 15 in 1977.

Tennessee in 1987 ranked third in value of shipments of wheat flour products, except mixes ($299.9 million, up 84% from 1982). Tennessee was not included in the listing of the top 15 states in shipments of wheat mill products other than flour.

Kansas retained its first-place ranking in shipments of wheat mill products other than flour ($48.1 million, down 5% from 1982). Kansas in 1987 had 24 plants, the same as in 1982. Kansas, with 1987 value of shipments of wheat flour products, except mixes, at $281.3 million, down 12% from 1982, was fourth in that category.

California was fourth in shipments of wheat mill products other than flour ($23.3 million, down 17% from 1982).

The Census report showed a total of 358 establishments in the Flour and Other Grain Mill Products Industry in 1987, compared with 360 in 1982, 407 in 1977, 457 in 1972 and 541 in 1967. While plant numbers between 1982 and 1987 decreased by only two establishments, there was a net increase in the number of plants with fewer than 20 employes.



In 1987, there were 193 plants in the Flour and Other Grain Mill Products Industry with fewer than 20 employes, up from 186 in 1982. Plants with 20 to 99 employes in 1987 totaled 125, down from 127 in 1982. The number of plants with 100 or more employes totaled 40 in 1987, down from 47 in 1982.

Those 40 plants with 100 or more employes, while representing only 11% of total establishments in 1987, accounted for 50% of total value added by manufacture in the Flour and Other Grain Mill Products Industry. Those plants in 1987 also accounted for 46% of total value of shipments, 45% of the cost of all materials and ingredients purchased and 44% of new capital expenditures.

There were 149 plants in the Prepared Flour Mixes and Doughs Industry in 1987. Of the total, 52 had fewer than 20 employes, 56 had 20 to 99 employes and 41 had 100 or more employes. The 41 plants with 100 or more employes in 1987, or 28% of the industry total, accounted for 81% of value added by manufacture, 79% of the value of shipments, 76% of materials and ingredients consumed and 80% of new capital expenditures.

Wheat, corn usage up; costs in decline

The Flour and Other Grain Mill Products Industry in 1987 recorded sharp increases in the utilization of wheat and corn but cost of all materials, ingredients, containers and supplies used by the establishments in Standard Industrial Classification 2041 were below 1982 levels. Sharply lower grain costs were responsible, according to the Census of Manufactures report for S.I.C. 2041.

MILLING CENSUS REPORT

Total delivered cost of materials, ingredients, containers and supplies used by establishments in S.I.C. 2041 in 1987 for products considered primary to the industry aggregated $3,332.7 million, down 7% from $3,585.6 million in 1982.

Establishments in S.I.C. 2041 in 1987 used 744.9 million bus of wheat, up 14% from 652.2 million bus in 1982. With a delivered cost of $2,343.9 million, or $3.15 per bu, wheat accounted for 70% of the cost of all materials, ingredients, containers and supplies used by S.I.C. 2041 in 1987. Delivered cost of wheat in 1982 was $2,655.8 million, or $4.07 per bu, representing 74% of the total.

A similar cost situation was evident in the use of corn, which increased for the first time since 1967. Mills in 1987 used 100.1 million bus of corn, up 45% from 69.2 million in 1982. Delivered cost of corn used by mills in 1987 was $185.6 million, or $1.85 per bu, down 6% from $198.4 million, or $2.87 per bu, in 1982.

Utilization of wheat flour by establishments in the Flour and Other Grain Mill Products Industry in 1987 totaled 33,661,600 cwts, more than a threefold increase from 8,017,500 cwts in 1982. The 33,661,600-cwt total for wheat flour use in 1987 was revised dramatically from the preliminary Census data that showed usage of wheat flour in 1987 at 17,138,900 cwts.

Delivered cost of wheat flour used by mills in S.I.C. 2041 in 1987 was placed at $282.2 million in the final report, up 232% from $84.9 million in 1982.

Mills in 1987 utilized 16.6 million bus of oats with a delivered cost of $27.3 million. Data on oat utilization in 1982 were withheld to avoid disclosing information on individual companies.

Use of barley in 1987 was 800,000 bus, down 38% from 1.3 million bus in 1982.

Data on utilization of sugar (cane and beet) in S.I.C. 2041 in 1987 were withheld in the Census report because the estimate did not meet publication standards on the basis of either the response rate or a consistency review. In 1982, sugar utilization aggregated 91,500 tons.

Mills in 1987 used 105.8 million lbs of fats and oils in flour and prepared flour mixes, with a delivered cost of $22.2 million. In 1982, mills used 77.4 million lbs of fats and oils, with delivered cost of $25.5 million.

Establishments in the Flour and Other Grain Mill Products Industry in 1987 spent $98.1 million on paper shipping sacks, up 150% from $39.2 million in 1982.

Mills used 64 million textile bags, including burlap, cotton and polypropylene, in 1987, up 7% from 60.6 million in 1982. Delivered cost of textile bags in 1987 was placed at $15.9 million, down 5% from $16.8 million in 1982.

Data on S.I.C. 2045

Utilization of wheat flour by establishments in the newly defined Prepared Flour and Mixes and Doughs Industry, S.I.C. 2045, totaled 19,972,000 cwts in 1987, with a delivered cost of $195.3 million. Data for 1982 are not strictly comparable because of the new industry classification.

Establishments in S.I.C. 2045 used 384,100 cwts of non-wheat flour and prepared flour mixes in 1987, with a delivered cost of $37.1 million.

Usage of sugar by the Prepared Flour Mixes and Doughs Industry in 1987 totaled 196.2 million tons, with delivered cost of $101 million; fats and oils utilization was placed at 181.4 million lbs, with delivered cost of $47.4 million.

Delivered cost of flexible packaging materials used by plants in S.I.C. 2045 in 1987 was $19.5 million; delivered cost of paperboard containers, boxes and corrugated paperboard totaled $88.2 million.

Delivered cost of all materials, ingredients, containers and supplies used by S.I.C. 2045 in 1987 aggregated $1,208.3 million.

Capital spending off

Expenditures for new plant and equipment by the 358 establishments in the Flour and Other Grain Mill Products Industry in 1987 were $79.5 million, down 12% from $90.6 million in 1982 but up from $52.4 million in 1977. The downturn in 1987 spending followed the pattern of most other industry categories in S.I.C. 20, Food and Kindred Products. Of the 37 food industries in S.I.C. 20 for which comparable data are available, capital spending in 1987 was below 1982 levels in 22 industries.

Combining the 1987 capital expenditures for new plant and equipment of $79.5 million and Annual Survey of Manufactures estimates for capital spending in S.I.C. 2041 provided an aggregate of $358.3 million in the five-year period ended in 1987. A comparable total for the five-year period in 1982 was $336.5 million.

The 1987 aggregate of $79.5 million for capital expenditures included $67.4 million for new machinery and equipment and $12.1 million for buildings and other structures, against $70.1 million and $20.5 million, respectively, in 1982. Thus, companies in 1987 spent only 4% less than in 1982 on new machinery and equipment but 41% less on buildings and other structures.

In the Prepared Flour Mixes and Doughs Industry, the 149 plants spent $66.1 million on new capital expenditures in 1987. Of that total, $55 million was for new machinery and equipment and $11.1 million was for buildings and other structures.